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## Education

### The Australian National University

PHD IN ENGINEERING

• Thesis Title: Coordination and Control of Autonomous Agent Formations

Canberra, Australia

February 2007 - January 2011

### Shiraz University

BSC. ELECTRICAL AND ELECTRONICS ENGINEERING – CONTROL ENGINEERING

Shiraz, Iran

September 2002 - September 2006

## Publications

### JOURNAL PAPERS

- [J1] M Yuan, C Manzie, M Good, **I Shames**, L Ga, F Keynejad, T Robinette, “A Review of Industrial Tracking Control Algorithms”, to appear in Control Engineering Practice, 2020.
- [J2] T A Wood, M Khoo, E Michael, C Manzie, **I Shames**, “Collision Avoidance Based on Robust Lexicographic Task Assignment”, to appear in the The IEEE Robotics and Automation Letters, 2020.
- [J3] S Safaoui, L Lindemann, D V Dimarogonas, **I Shames**, T H Summers, “Control Design for Risk-Based Signal Temporal Logic Specifications”, to appear in IEEE Control Systems Letters, 2020.
- [J4] C Murguia, F Farokhi, **I Shames**, “Secure and Private Implementation of Dynamic Controllers Using Semi-Homomorphic Encryption”, to appear in the IEEE Transactions on Automatic Control, 2020.
- [J5] C Murguia, **I Shames**, J Ruths, D Nešić, “Security Metrics and Synthesis of Secure Control Systems”, to appear in Automatica, 2020.
- [J6] J Tran, F Farokhi, M Cantoni, **I Shames**, “Implementing Homomorphic Encryption Based Secure Feedback Control”, to appear in Control Engineering Practice, 2020.
- [J7] F Farokhi, **I Shames**, K H Johansson, “Private Routing and Ride Sharing Using Homomorphic Encryption”, to appear in IET Cyber-Physical Systems: Theory & Applications, 2020.
- [J8] A Lasage-Landy, **I Shames**, J A Taylor. “Predictive Online Convex Optimization”, to appear in Automatica, 2020.
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- [J10] A Lasage-Landy, H Wang, **I Shames**, P Mancarella, J A Taylor, “Online Convex Optimization of Multi-energy Building-to-grid Ancillary Services”, to appear in the IEEE Transactions on Control Systems and Technology, 2020.
- [J11] M Yuan, C Manzie, M Good, **I Shames**, L Gan, F Keynejad, T Robinette, “Error-Bounded Reference Tracking MPC for Machines with Structural Flexibility”, to appear in IEEE Transactions on Industrial Electronics, 2020.
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- [J13] **I Shames**, D Selvaratnam, J Manton, “Online optimisation using zeroth order oracles” to appear in IEEE Control Systems Letters, 2020.
- [J14] M Deghat, V Ugrinovskii, **I Shames**, C Langbort, “Detection and Mitigation of Biasing Attacks on Distributed Estimation Networks”, Automatica Vol. 99, pp 369-381, 2019.
- [J15] F Farokhi, **I Shames**, M Cantoni, “Optimal Contract Design for Effort-Averse Sensors”, International Journal of Control, Vol. 28, pp 1-8 2018
- [J16] M Schulze Darup, A Redder, **I Shames**, F Farokhi, D E Quevedo, “Towards Encrypted MPC for Linear Constrained Systems”, IEEE Control Systems Letters, Vol. 2, No. 2, pp 95-200, 2018.
- [J17] M A Fabbro, **I Shames**, M Cantoni, “Analysis of Model and Iteration Dependencies in Distributed Feasible-Point Algorithms for Optimal Control Computation,” the Transactions on Control of Network Systems, Vol. 5, No. 1, pp 186 – 193, 2018.
- [J18] M Cantoni, F Farokhi, E C Kerrigan, **I Shames**, “Structured Computation of Optimal Controls for Constrained Cascade Systems”, International Journal of Control, , pp. 1–10, 2017.
- [J19] M A Fabbro, **I Shames**, M Cantoni, “Analysis of Model and Iteration Dependencies in Distributed Feasible-Point Algorithms for Optimal Control Computation,” to appear in the Transactions on Control of Network Systems, 2017.
- [J20] F Farokhi, **I Shames**, N Batterham, “Secure and Private Control Using Semi-Homomorphic Encryption”, Control Engineering Practice, Vol. 67, pp 13 – 20, 2017.
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- [J34] E Ghadimi, A H Teixeira, **I Shames**, M Johansson, “Optimal parameter selection for the alternating direction method of multipliers (ADMM): quadratic problems”, *IEEE Transactions on Automatic Control*, Vol. 60, No. 3, pp. 644 - 658, 2014.
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- [J51] **I Shames** and A N Bishop. “Relative clock synchronization in wireless networks”, *IEEE Communications Letters*, Vol. 14, No. 4, 2010.
- [J52] **I Shames**, B Fidan, B D O Anderson, “Minimization of the Effect of Noisy Measurements on Localization of Multi-Agent Autonomous Formations”, *Automatica*, Vol. 45, No. 4, pp 1058-1065, 2009.
- [J53] B Moghtaderi, **I Shames**, E Doroodchi “Combustion Prevention of Iron Powders by a Novel Coating Method” *Chemical Engineering & Technology*, Vol. 29, No. 1, pp 97-103, 2006.
- [J54] B Moghtaderi, **I Shames**, L Djenidi “Microfluidic Characteristics of a Multi-holed Baffle Plate Micro-Reactor”, *International Journal of Heat and Fluid Flow*, Vol. 27, No. 6, pp 1069-1077, 2006.

## BOOK CHAPTERS

- [B1] C Murguia, I Shames, F Farokhi, D Nešić, “Information-Theoretic Privacy Through Chaos Synchronization and Optimal Additive Noise”. In: Farokhi F. (eds) *Privacy in Dynamical Systems*. Springer, Singapore, 2020.
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- [B4] **I Shames**, B Fidan, B D O Anderson, and H Hmam, Position Location - Theory, Practice and Advances: A Handbook for Engineers and Academics, chapter 27, “Self-Localization of UAV Formations Using Bearing Measurements”, John Wiley & Sons, 2011.

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- [C1] E Michael, D Zelazo, T A Wood, C Manzie, **I Shames**, “Optimization with Zeroth-Order Oracles in Formation”, to appear in the Proceedings of the IEEE Conference on Decision and Control (CDC), 2020.
- [C2] M Taheri, K Khorasani, **I Shames**, N Meskin, “Undetectable Cyber Attacks on Communication Links in Multi-Agent Cyber-Physical Systems”, to appear in the Proceedings of the IEEE Conference on Decision and Control (CDC), 2020.
- [C3] D Burke, A Chapman, **I Shames**, “Generating Minimum-Snap Quadrotor Trajectories Really Fast”, to appear in the Proceedings of the 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2020).
- [C4] M Taheri, K Khorasani, **I Shames**, N Meskin, “Analysis of Cyber Attacks on Communication Links in Multi-Agent Systems”, to appear in the Proceedings of IEEE Conference on Control Technology and Applications (CCTA), Montreal, Canada, August, 2020
- [C5] G G Colabufo, P Dower, **I Shames**, “Newton’s method: sufficient conditions for practical and input-to-state stability”, to appear in IFAC World Congress, Berlin, Germany, July 2020.
- [C6] V Renganathan, **I Shames**, T H Summers, “Towards Integrated Perception and Motion Planning with Distributionally Robust Risk Constraints”, to appear in IFAC World Congress, Berlin, Germany, July 2020.
- [C7] M Zamani, **I Shames**, R Hunjet, “Distributed Signal Signature Minimization Via Network Topology Modification”, to appear in IFAC World Congress, Berlin, Germany, July 2020.
- [C8] C Murguía, **I Shames**, F Farokhi, D Nešić, “Privacy Against State Estimation: An Optimization Framework based on the Data Processing Inequality”, to appear in IFAC World Congress, Berlin, Germany, July 2020.
- [C9] M Khoo, T Wood, C Manzie, **I Shames**, “Exploiting Structure in the Bottleneck Assignment Problem”, to appear in IFAC World Congress, Berlin, Germany, July 2020.
- [C10] A Pavlov, M Müller, C Manzie, **I Shames**, “Complexity minimisation of suboptimal MPC without terminal constraints”, to appear in IFAC World Congress, Berlin, Germany, July 2020.
- [C11] R Chin, S I Maass, N Ulapane, C Manzie, **I Shames**, D Nešić, J Rowe, H Nakada, “Active Learning for Linear Parameter-Varying System Identification”, to appear in IFAC World Congress, Berlin, Germany, July 2020.
- [C12] A I Maass, C Manzie, **I Shames**, R Chin, D Nešić, N Ulapane, H Nakada, “Tuning of model predictive engine controllers over transient drive cycles”, to appear in IFAC World Congress, Berlin, Germany, July 2020.
- [C13] Y Lin, **I Shames**, D Nešić, “Asynchronous Distributed Optimization via Dual Decomposition and Block Coordinate Ascent”, in the Proc. of the IEEE Conference on Decision and Control (CDC), Nice, France, Dec. 2019.
- [C14] M Khoo, T Wood, C Manzie, **I Shames**, “Distributed Algorithm for Solving the Bottleneck Assignment Problem”, in the Proc. of the IEEE Conference on Decision and Control (CDC), Nice, France, Dec. 2019.
- [C15] H Nasir, E Weyer, **I Shames**, M Cantoni, “Towards Redundant Constraint Removal in Scenario Approximation of Optimal Control Problems with Multiplicative Model Uncertainty”, in the Proc. of the IEEE Conference on Decision and Control (CDC), Nice, France, Dec. 2019.
- [C16] W Wang, R Postoyan, D Nešić, **I Shames**, W P M H Heemels, “State-Feedback Event-Holding Control for Nonlinear Systems”, in the Proc. of the IEEE Conference on Decision and Control (CDC), Nice, France, Dec. 2019.
- [C17] M Yuan, C Manzie, L Gan, M Good, **I Shames**, “Modelling and Contouring Error Bounded Control of a Biaxial Industrial Gantry Machine”, in Proc. of The 3rd IEEE Conference on Control Technology and Applications (CCTA 2019), Hong Kong, 2019.
- [C18] A Pavlov, **I Shames**, C Manzie, “Enhancing computational efficiency for a class of NMPC solvers”, European Control Conference, Napoli, Italy, June 23 – 25, 2019.
- [C19] E Michael, T Wood, C Manzie, **I Shames**, “Uncertainty Intervals for Robust Bottleneck Assignment”, European Control Conference, Napoli, Italy, June 23 – 25, 2019.
- [C20] Z Ju, **I Shames**, D Nešić, “Communication Connectivity in Multi-agent Systems with Multiple Uncooperative Agents”, Asian Control Conference, Japan, June 09-11, 2019
- [C21] M Yuan, C Manzie, M Good, **I Shames**, F Keynejad, T Robinette, “Bounded Error Tracking Control for Contouring Systems with End Effector Measurements”, in the Proc. 20th IEEE International Conference on Industrial Technology (ICIT 2019), Melbourne, Australia, February 13-15, 2019.
- [C22] F Farokhi, **I Shames**, “Bilateral Trade under Information Asymmetry and Quantized Measurements”, in the Proc. of the IEEE Conference on Decision and Control (CDC), Fontainebleau, Miami Beach, FL, USA on Dec. 17-19, 2018.
- [C23] Y Lin, F Farokhi, **I Shames**, D Nešić, “Secure Control of Nonlinear Systems Using Semi-Homomorphic Encryption”, in the Proc. of the IEEE Conference on Decision and Control (CDC), Fontainebleau, Miami Beach, FL, USA on Dec. 17-19, 2018.
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- [C28] A Lang, **I Shames**, M Cantoni, “Structure in Total Least Squares Parameter Estimation for Electrical Networks”, in the Proc. of the 7th IFAC Workshop on Distributed Estimation and Control in Networked Systems, The Netherlands, Aug, 2018
- [C29] F Farokhi, **I Shames**, “Compressive Sensing in Fault Detection”, in the Proc. of the American Control Conference, Milwaukee, WI, USA, June 2018
- [C30] **I Shames**, A Dostovalova, J Kim, H Hmam, “Task Allocation and Motion Control for Threat-Seduction Decoys,” in the Proc. of the 56th IEEE Conference on Decision and Control, Melbourne, Australia, Dec, 2017
- [C31] D Selvaratnam, **I Shames**, D V Dimarogonas, J H Manton, B Ristić, “Co-operative Estimation for Source Localisation using Binary Sensors,” in the Proc. of the 56th IEEE Conference on Decision and Control, Melbourne, Australia, Dec, 2017
- [C32] F Farokhi, **I Shames**, K H Johansson, “Private and Secure Coordination of Match-Making for Heavy-Duty Vehicle Platooning,” in the Proc. of the 20th IFAC World Congress, Toulouse, France, July 2017.
- [C33] **I Shames**, F Farokhi, M Cantoni, “Guaranteed maximum power point tracking by scalar iterations with quadratic convergence rate”, in Proc. of the 55th IEEE Conference on Decision and Control, Las Vegas, USA, Dec, 2016.
- [C34] F Farokhi, **I Shames**, “Preserving Privacy of Agents in Participatory-Sensing Schemes for Traffic Estimation”, in Proc. of the 55th IEEE

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- [C35] Z Ju, **I Shames**, D Nešić, “Ensuring Communication Connectivity in Multi-agent Systems in the Presence of Uncooperative Clients”, in Proc. of the 55th IEEE Conference on Decision and Control, Las Vegas, USA, Dec, 2016.
- [C36] M Deghat, V Ugrinovskii, **I Shames**, C Langbort, “Detection of Biasing Attacks on Distributed Estimation Networks”, in Proc. of the 55th IEEE Conference on Decision and Control, Las Vegas, USA, Dec, 2016.
- [C37] M Cantoni, F Farokhi, E Kerrigan, **I Shames**, “A Scalable QP Solver for Optimal Control of Cascades with Constraints”, in Proceedings of the Australian Control Conference (AUCC 2016), Newcastle, Australia, November 3-4, 2016.
- [C38] F Farokhi, M Cantoni, and **I Shames**, “A Game-Theoretic Approach to Scheduling Rigid Demands on Dynamical Systems”, in Proceedings of the Australian Control Conference (AUCC 2016), Newcastle, Australia, November 3-4, 2016.
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- [C41] D D Selvaratnam, **I Shames**, B Ristic, J Manton, “The Effect of Sensor Modality on Posterior Cramer-Rao Bounds for Simultaneous Localisation and Mapping” to appear in the Proc. of the 9th IFAC Symposium on Intelligent Autonomous Vehicles, Messe Leipzig, Germany, June-July, 2016.
- [C42] Y Zhu, **I Shames**, C Manzie, “Stability Analysis for Distributed Perimeter Controlled Traffic Networks” to appear in the American Control Conference, Boston MA, July, 2016.
- [C43] **I Shames**, T H Summers, F Farokhi, R C Shekhar, “Conditions and Strategies for Uniqueness of the Solutions to Cooperative Localization and Mapping Problems Using Rigidity Theory,” In Proc. of the 54th IEEE Conference on Decision and Control (CDC 2015), Osaka, Japan, Dec., 2015.
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- [C53] **I Shames**, T H Summers, “Network Design Via Modular Functions Optimization in Localization Problems”, in Proc. of the 8th IEEE Sensor Array And Multichannel Signal Processing Workshop (SAM14), A Cruna, Spain, 2014.
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- [C66] M Deghat, E Davis, T See, **I Shames**, B D O Anderson, C Yu, “Target Localization and Circumnavigation by a Non-holonomic Robot”, In the 2012 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2012), October 7-12, pp. 1227-1232, Vilamoura, Algarve, Portugal, 2012.
- [C67] **I Shames**, A M H Teixeira, H Sandberg, K H Johansson, “Distributed Fault Detection and Isolation with Imprecise Network Models”, In Proc. American Control Conference, pp. 5906-5911, Montreal, Canada, June, 2012.
- [C68] A N Bishop, **I Shames**, B. D. O. Anderson, “Stabilization of Rigid Formations with Direction-Only Constraints”, in 50th IEEE Conference on Decision and Control and European Control Conference (CDC-ECC), pp. 746-752, Orlando, USA, 2011.
- [C69] **I Shames**, A N Bishop, M Smith, B D O Anderson, “Target Velocity and Position Estimation Via Doppler Shift Measurements”, in the Australian Control Conference, pp 507-512, Melbourne, Australia, 2011.
- [C70] **I Shames**, A N Bishop, “Distributed Relative Clock Synchronization for Wireless Sensor Networks”, In 18th World Congress of the International Federation of Automatic Control, (IFAC 2011), Milan, Italy, 2011.
- [C71] **I Shames**, M Deghat, B D O Anderson, “Safe Formation Control and Coordination with Obstacle Avoidance”, In 18th World Congress of the International Federation of Automatic Control, (IFAC 2011), pp 11252 - 11257, Milan, Italy, 2011.
- [C72] M Deghat, **I Shames**, B D O Anderson, J M F Moura, “Distributed Localization Via Barycentric Coordinates: Finite-Time Convergence”, In 18th World Congress of the International Federation of Automatic Control, (IFAC 2011), pp 7824 - 7829, Milan, Italy, 2011.
- [C73] A N Bishop, **I Shames**, “Noisy Network Localization via Optimal Measurement Refinement Part 1: Bearing-Only Orientation Registration and Localization”, In 18th World Congress of the International Federation of Automatic Control, (IFAC 2011), pp. 8842-8846, Milan, Italy, 2011.
- [C74] **I Shames**, A N Bishop, “Noisy Network Localization via Optimal Measurement Refinement Part 2: Distance-Only Localization”, In 18th World Congress of the International Federation of Automatic Control, (IFAC 2011), pp. 8847-8853, Milan, Italy, 2011.
- [C75] E Ghadimi, M Johansson, **I Shames**, “Accelerated Gradient Methods for Networked Optimization”, Proc. American Control Conference, pp 1668-1673, San Francisco, CA, June-July, 2011.
- [C76] A N Bishop, **I Shames**, “A Model for Optimal and Robust Control with Time-Varying Computing Constraints” Proc. 6th Int. Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), pp. 217-222, Brisbane, Australia, December 2010.
- [C77] I Bayezit, B Fidan, M Amini, **I Shames**, “Cohesive Motion Control of Autonomous Formations in Three Dimensions”, Proc. 6th Int. Conf. on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP), pp. 205-210, Brisbane, Australia, December 2010.
- [C78] **I Shames**, A M H Teixeira, H Sandberg, K H Johansson, “Distributed Leader Selection without Direct Inter-agent Communication”, 2nd IFAC Workshop on Estimation and Control of Networked Systems, pages 221-226, Annecy, France, 2010.
- [C79] I Bayezit, M Amini, B Fidan, **I Shames**, “Cohesive Motion Control of Quadrotor Vehicle Formation”, Proceedings of the ASME 2010 International Mechanical Engineering Congress & Exposition, IMECE2010-40740, Vancouver, Canada, November 2010.
- [C80] M Deghat, **I Shames**, B D O Anderson, C Yu, “Target Localization and Circumnavigation Using Bearing Measurements in 2D”, in Proc. 49th IEEE Conference on Decision and Control, pp 334-339, Atlanta, GA, USA, 2010.
- [C81] **I Shames**, A M H Teixeira, H Sandberg, K H Johansson, “Distributed Fault Detection for Interconnected Second-Order Systems with Applications to Power Networks”, First Workshop on Secure Control Systems (SCS), Stockholm, Sweden, 2010
- [C82] **I Shames**, B D O Anderson, and B Fidan, “On the use of convex optimization in sensor network localization and synchronization”. in Proc. IFAC Workshop on Estimation and Control of Networked Systems, pages 228-233, Venice, Italy, 2009.
- [C83] **I Shames**, B D O Anderson, X F Wang, and B Fidan. “Network synchronizability enhancement using convex optimization”, in Proc. European Control Conference, pages 2067-2072, 2009.
- [C84] **I Shames**, S Dasgupta, B Fidan, and B D O Anderson. “Circumnavigation using distance measurements”, in Proc. European Control Conference, pages 2444-2449, Budapest, Hungary, 2009.
- [C85] R Soukieh, **I Shames**, and B Fidan. “Obstacle avoidance of non-holonomic unicycle robots based on Fluid mechanical modeling”, in Proc. European Control Conference, pages 3269-3274, Budapest, Hungary, 2009.
- [C86] R Soukieh, **I Shames**, and B Fidan. “Obstacle avoidance of robotic formations based on Fluid mechanical modeling”, in Proc. European Control Conference, pages 3263-3268, Budapest, Hungary, 2009.
- [C87] **I. Shames**, P T Bibalan, B Fidan, B D O Anderson, “Polynomial methods in noisy network localization”, in Proc. 17th Mediterranean Conference on Control and Automation, pp. 1307-1312, June 2009.
- [C88] G Piovani, **I Shames**, B Fidan, F Bullo, B D O Anderson, “On frame and orientation localization for relative sensing networks”, in Proc. 47th IEEE Conference on Decision and Control, pp. 2326-2331, Cancun, Mexico, December 2008.
- [C89] **I Shames**, B Fidan, B D O Anderson, “Close Target Reconnaissance Using Autonomous UAV Formations”, in Proc. 47th IEEE Conference on Decision and Control, pp. 1729-1734, Cancun, Mexico, December 2008.
- [C90] **I Shames**, B Fidan, B D O Anderson, “Reduction of Self-localization Errors in Multi-Agent Autonomous Formations”, in Proc. 17th World Congress of Int. Federation of Automatic Control (IFAC’08), pp. 6578-6583, Seoul, Korea, July 2008.
- [C91] **I Shames**, B Fidan, B D O Anderson, H Hmam, “Self-localization of Mobile Agents in the Plane”, in IEEE Int. Symposium on Wireless Pervasive Computing, pp. 116-120, Santorini, Greece, May 2008.
- [C92] **I Shames**, C Yu, B Fidan, B D O Anderson, “Externally Excited Coordination of Autonomous Formations”, in Proc. 15th Mediterranean Conference on Control and Automation, Athens, Greece, June 2007.
- [C93] C Yu, B Fidan, **I Shames**, S Sandeep, B D O Anderson, “Collision Free Coordination of Autonomous Multiagent System”, in Proc. European Control Conference, pp. 900-907, Kos, Greece, July 2007.
- [C94] **I Shames**, N Najmaei, M Zamani, A A Safavi, “A New Intelligent Traffic Shaper for High Speed Networks”, 18th IEEE International Conference on Tools for Artificial Intelligence, Arlington, VA, USA, 2006
- [C95] B Moghtaderi, **I Shames** and L Djenidi “Application of Micro-PIV Technique in Examining the Mixing Behaviour in a Novel Micro-reactor”, Fourth Australian Conference on Laser Diagnostics in Fluid Mechanics and Combustion, The University of Adelaide, South Australia, Australia, 2005.

## Grants, Honors & Awards

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2020 – 2022	<b>Development and demonstration of technologies for a trusted autonomous vehicle capable of understanding its environment, adapting to it and acting in it</b> , Trusted Autonomous Systems Defence CRC	<i>D-CRC</i>
2019	<b>School of EMI Emerging Leader Award</b> , University of Melbourne, School of Electrical, Mechanical, and Infrastructure Engineering	<i>UniMelb, EMI</i>
2020 – 2022	<b>Co-design and dynamic mission optimisation of hypersonic flight vehicles</b> , Australian Research Council and BAE Systems	<i>ARC - BAES</i>
2019 – 2022	<b>NEURO-AUTONOMY: PERCEPTION, NAVIGATION AND SPATIAL AWARENESS FOR AUTONOMOUS ROBOTS (AUSMURI - Australia) US Defense Multidisciplinary University Research Initiative Program</b> , DEPARTMENT OF INDUSTRY, INNOVATION AND SCIENCE	<i>AUSMURI</i>
2019 – 2020	<b>Verifiable Hierarchical Sensing, Planning and Control</b> , AFOSR – Defence Science & Technology Group	<i>AFOSR-DSTG</i>
2019 - 2021	<b>Trusted Scalable Effect Delivery by Expendable, Autonomous Swarms</b> , Trusted Autonomous Systems Defence CRC	<i>D-CRC</i>
2019 – 2021	<b>Protection/resilient control of cyber-physical systems against malicious attacks (G5479-MYP)</b> , NATO Science for Peace and Security (SPS) Programme	<i>NATO</i>
2018 – 2020	<b>Motion Planning and Task Allocation of Multiple Decoys for Ship Protection (Postdoc and PhD scholarships)</b> , Defence Science & Technology Group	<i>DSTG</i>
2017 – 2019	<b>Modeling, analysis and design of secure networked control systems (DP170104099)</b> , Australian Research Council	<i>ARC</i>
2017 – 2018	<b>Development of solution methods for coordinating multiple EW decoys for protection of naval task group against multiple threat missiles – with focus on motion planning and task allocation</b> , Defence Science & Technology Group	<i>DSTG</i>
2017 – 2018	<b>Tactical security and health in multi-modal sensor control and management</b> , Defence Science & Technology Group	<i>DSTG</i>
2016 – 2019	<b>Automatic control systems for low-energy pipelines in irrigation networks (LP160100666)</b> , Australian Research Council	<i>ARC</i>
2016 – 2019	<b>Practical model-based control for low emission and low cost diesel engines (LP160100650)</b> , Australian Research Council	<i>ARC</i>
2016 – 2017	<b>Tactical security and health management across intra-vehicle and inter-vehicle systems</b> , Defence Science & Technology Group	<i>DSTG</i>
2015 – 2016	<b>Demonstration of simultaneous localisation and mapping (SLAM) with compact sensors</b> , Defence Science & Technology Group	<i>DSTG</i>
2016	<b>Control engineering for high school students and teachers: an online platform development (IEEE-CSS Outreach Task Force)</b> , , Institute of Electrical and Electronic Engineers (IEEE)	<i>IEEE</i>
2013 – 2016	<b>Ensuring security and resilience in critical cyber-physical systems</b> , McKenzie Fellowship, University of Melbourne	<i>UoM</i>
2013	<b>Early Career Researcher Grant</b> , University of Melbourne	<i>UoM</i>
2011 – 2012	<b>ACCESS Linnaeus Postdoctoral Fellowship</b> , KTH Royal Institute of Technology	<i>KTH</i>
2010	<b>Selected as one of the 3 PhD Students from ANU to attend UniLead Leadership Program</b> , The Australian National University	<i>ANU</i>
2010	<b>International Alliance of Research Universities Travel Grant and Selected as 2 of PhD Students from ANU to Attend ANU-KU UniGo exchange program</b> , The Australian National University	<i>ANU</i>
2008, 2010	<b>Vice-Chancellor Travel Grant</b> , The Australian National University	<i>ANU</i>
2008	<b>International Alliance of Research Universities Travel Grant</b> , The Australian National University	<i>ANU</i>
2008	<b>ICE-EM/AMSI Financial Aid</b> , ICE-EM/AMSI	<i>AMSI</i>
2008	<b>Endeavor International Post-Graduate Research Scholarship (EIPRS)</b> , Endeavour Programme	<i>EIPRS</i>
2003 – 2005	<b>Vice Chancellor’s Commendation for Academic Performance and Achievement</b> , Shiraz University	<i>ShirazU</i>

## Teaching Experience

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## Department of Electrical and Electronic Engineering, University of Melbourne

LECTURER AND SUBJECT COORDINATOR

Secure Cyber-physical Systems, ELEN90080  
Power Electronics, ELEN90075  
Introduction to Optimisation, ELEN90026  
Embedded Systems Design, ELEN90066

Melbourne, Australia

2014 – present

Summer/Autumn 2017

Winter/Spring 2015 – 2018

Winter/Spring 2013, 2014, 2016 – 2019

Summer/Autumn 2020

## School of Electrical Engineering, KTH Royal Institute of Technology

CO-LECTURER, GRADUATE COURSE ON NETWORKED AND MULTI-AGENT CONTROL SYSTEMS, EL3330

Stockholm, Sweden

2011

## College of Engineering and Computer Science, The Australian National University

TEACHING ASSISTANT

Engineering System Analysis  
Control Systems  
Digital Signal Processing and Control

Canberra, Australia

2014 – present

2008 – 2010

2009

2007

## Employment

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### ACADEMIC

#### University of Melbourne

Associate Professor and Control and Signal Processing Group Leader  
Senior Lecturer (Assistant Professor)  
McKenzie Fellow  
Research Fellow

Melbourne, Australia

August 2012 – present

January 2020 – present

October 2014 – December 2019

January 2013 – January 2016

August 2012 – January 2013

#### KTH Royal Institute of Technology

POSTDOCTORAL RESEARCHER AT ACCESS LINNAEUS CENTRE

Stockholm, Sweden

February 2011 – August 2012

### NON-ACADEMIC

#### Burgmann College, The Australian National University

ASSISTANT NETWORK ADMINISTRATOR

Canberra, Australia

2008–2009

#### Foolade Shiraz Ltd.

NETWORKING CONSULTANT

Shiraz, Iran

2004 – 2005

#### Pourab Co.

NETWORKING CONSULTANT

Shiraz, Iran

2004 – 2005

## Professional Activities and Service

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January 2020 –  
present

**Editorial Board Member**, Automatica

July 2019 –  
present

**Editorial Board Member**, IEEE Transactions on Control of Networked Systems

November 2018  
– present

**Editorial Board Member**, Control Engineering Practice

September 2018  
– present

**Editorial Board Member**, Control Theory and Application

June 2018

**Co-chair and organiser of the invited sessions “Security & Privacy of Cyber-Physical Systems” (Parts 1 & 2)**, American Control Conference (ACC 2018)

Milwaukee, USA

August 2018

**Technical Program Committee Member**, 7th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys'18)

Groningen, The Netherlands

November 2016

**Technical Program Committee Member**, 13th International Symposium on Distributed Autonomous Robotic Systems (DARS 2016)

London, UK

September 2016	<b>Technical Program Committee Member</b> , 6th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys'16)	<i>Tokyo, Japan</i>
December 2016	<b>Co-chair and organiser of the invited session “Privacy in Complex Systems”</b> , 54th IEEE Conference on Decision and Control (CDC 2015)	<i>Osaka, Japan</i>
November 2013	<b>Technical Program Committee Member</b> , Australian Control Conference, November 2013	<i>Perth, Australia</i>
November 2013	<b>Technical Program Committee Member</b> , 5th ACM Workshop On Embedded Systems For Energy-Efficiency In Buildings	<i>Rome, Italy</i>
August 2013	<b>Technical Program Committee Member</b> , 1st IEEE International Conference on Cyber-Physical Systems, Networks, and Applications	<i>Taipei, Taiwan</i>
September 2011	<b>Co-chair and organiser of the invited session “New trends in networked systems: estimation, control, and security”</b> , IFAC World Congress	<i>Milan, Italy</i>
January 2010	<b>Co-chair and organiser</b> , Symposium on Advances in Optimization for Distributed Control, Information Fusion and Sensor Network Applications and the Program Committee Member of The Sixth International Conference on Intelligent Sensors, Sensor Networks and Information Processing (ISSNIP)	<i>Brisbane, Australia</i>

## Invited Talks

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June 2019	<b>Department of Electrical Engineering</b> , Imperial College	<i>London, UK</i>
April 2019	<b>Department of Electrical Engineering</b> , Concordia	<i>Montreal, Canada</i>
April 2019	<b>Department of Electrical and Electronic Engineering</b> , University of Toronto	<i>Toronto, Canada</i>
April 2018	<b>Department of Aerospace Engineering</b> , TECHNION	<i>Haifa, Israel</i>
April 2018, June 2014, September 2009,	<b>Department of Automatic Control</b> , KTH – Royal Institute of Technology,	<i>Stockholm, Sweden</i>
March 2010		
May 2017	<b>Department of Electrical and Electronic Engineering</b> , University of Toronto	<i>Toronto, Canada</i>
June 2015,		
September 2016	<b>School of Mechanical and Mining Engineering</b> , University of Queensland	<i>Brisbane, Australia</i>
July 2012	<b>Automatic Control Lab</b> , ETH	<i>Zürich, Switzerland</i>
February 2012	<b>Department of Electrical and Electronic Engineering</b> , University of Melbourne	<i>Melbourne, Australia</i>
January 2012	<b>School of Electrical Engineering and Computer Science</b> , The University of Newcastle	<i>Newcastle, Australia</i>
October 2011	<b>Gipsa-lab, Systèmes et Commandes en Réseaux, Département Automatique</b> , University of Grenoble	<i>Grenoble, France</i>
September 2011	<b>Delft Center for Systems and Control</b> , Delft University of Technology	<i>Delft, The Netherlands</i>
September 2011	<b>Institute of Automatic Control Engineering (LSR)</b> , Technische Universität München	<i>Münich, Germany</i>
July 2011	<b>Department of Signals and Systems</b> , Chalmers Institute of Technology	<i>Göteborg, Sweden</i>
June 2008	<b>Department of Information and Physical Sciences</b> , University of Tokyo	<i>Tokyo Japan</i>
January 2007	<b>Intelligent Robot Research Center</b> , Monash University	<i>Melbourne, Australia</i>

## Referees

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Available upon request.