

# Mehran Shakarami

Intelligent Algorithms Researcher

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## Experience

- 2018–current **Graduate Research Assistant**, University of Groningen
- Designing optimization algorithms and feedback controllers that provide coordination among distributed selfish agents. Outcome: 2 journal and 2 conference publications
  - Obtained the “Dutch Institute for Systems and Control” certificate by passing 7 courses
  - Co-advised one MSc and 4 BSc students
- Spring 2019, '20, '21 **Lecturer Assistant**, University of Groningen
- Lecturer assistant for “Distributed Optimization in Engineering Systems”
- 2014–2018 **Research Assistant**, Tehran Polytechnic
- Designed learning algorithms using multiple models for accurate, rapid, and robust state estimation and control. Outcome: 3 journal and one conference publications
  - Devised intraoperative brain shift estimators based on Kalman filtering. Outcome: 2 journal publications
  - Developed an estimation scheme for parameters of synchronous generators. Outcome: one conference publication

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## Education

- 2018–2022 **PhD in Applied Mathematics**, ENTÉG, University of Groningen, The Netherlands  
(Expected) *Dissertation topic*: coordination of noncooperative agents in networked engineering systems
- 2011–2014 **MSc in Control Engineering**, *Electrical Engineering Department*, Tehran Polytechnic, Iran  
*Thesis*: “Estimation of intra-operative brain shift for surgery path correction”
- 2007–2011 **BSc in Electronics Engineering**, Shamsipour College, Iran

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## Honors & Awards

- 2014 **Best Researcher Award** for exceptional achievements in brain shift estimation, Tehran Polytechnic, Iran
- 2011 **Ranked Second** among Electronics Engineering students of Shamsipour College in bachelor's degree
- 2007 **Ranked 19<sup>th</sup> (top 0.09%)** in the nationwide college entrance exam in Electronics Engineering among more than 22,000 participants, Iran

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## Skills

- Scientific Optimization • Distributed algorithms • Adaptive learning • Nonlinear control • Game theory • Machine learning
- Computer MATLAB • Python •  $\text{\LaTeX}$  • HTML

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## Publications

### Submitted journal preprints

- J-7 **M. Shakarami**, A. Cherukuri, and N. Monshizadeh, "Steering the aggregative behavior of noncooperative agents: a nudge framework", 2020. Available online at <https://arxiv.org/abs/2012.06376>
- J-6 **M. Shakarami**, C. De Persis, and N. Monshizadeh, "Privacy and robustness guarantees in distributed dynamics for aggregative games", 2019. Available online at <https://arxiv.org/abs/1910.13928>
- J-5 **M. Shakarami**, K. Esfandiari, A.A. Suratgar, and H.A. Talebi, "A rapid fault reconstruction strategy using a bank of sliding mode observers", 2019. Available online at <https://arxiv.org/abs/1904.10525>

### Journals

- J-4 K. Esfandiari and **M. Shakarami**, "Bank of high-gain observers in output feedback control: robustness analysis against measurement noise", *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 51, no. 4, pp. 2476–2487, 2021
- J-3 **M. Shakarami**, K. Esfandiari, A.A. Suratgar, and H.A. Talebi, "Peaking attenuation of high-gain observers using adaptive techniques: state estimation and feedback control", *IEEE Transactions on Automatic Control*, vol. 65, no. 10, pp. 4215–4229, 2020
- J-2 **M. Shakarami**, A.A. Suratgar, and H.A. Talebi, "Intraoperative brain shift estimation using atlas of brain deformations and constrained Kalman filter", *IEEE Transactions on Control Systems Technology*, vol. 28, no. 1, pp. 139–148, 2020
- J-1 **M. Shakarami**, A.A. Suratgar, and H.A. Talebi, "Estimation of intraoperative brain shift based on constrained Kalman filter", *ISA Transactions*, vol. 55, pp. 260–266, 2015

### Conferences

- C-4 **M. Shakarami**, A. Cherukuri, and N. Monshizadeh, "Adaptive interventions for social welfare maximization in network games", *60th IEEE Conference on Decision and Control (CDC)*, 2021. Accepted
- C-3 **M. Shakarami**, A. Cherukuri, and N. Monshizadeh, "Nudging the aggregative behavior of noncooperative agents", *59th IEEE Conference on Decision and Control (CDC)*, pp. 2579–2584, 2020
- C-2 **M. Shakarami**, K. Esfandiari, A.A. Suratgar, and H.A. Talebi, "On the peaking attenuation and transient response improvement of high-gain observers", *57th IEEE Conference on Decision and Control (CDC)*, pp. 577–582, 2018
- C-1 **M. Shakarami**, K. Esfandiari, M.A. Shamsi, and M.B. Menhaj, "High-gain observer-based identification scheme for estimation of physical parameters of synchronous generators", *24th Iranian Conference on Electrical Engineering (ICEE)*, pp. 1422–1427, 2016

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## Professional Affiliations & Services

### Reviewer

IEEE Transactions on Automatic Control • Automatica • American Control Conference

### Affiliations

2020–current Institute of Electrical and Electronics Engineers (IEEE)

2014–current National elites foundation

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## Languages

