Bahman Gharesifard

Curriculum vitae: November, 2023

Professor
UCLA Samueli
Electrical and Computer Engineering
University of California, Los Angeles

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POSITIONS

Professor, **University of California, Los Angeles** July 2021–
Area Director for Signals and Systems July 2023–
UCLA Samueli School of Engineering
Department of Electrical and Computer Engineering

Professor of Mathematics, **Queen's University** July 2023 –
Department of Mathematics and Statistics

Associate Professor, **Queen's University** July 2019 – June 2021
Department of Mathematics and Statistics

Alexander von Humboldt Fellow, **University of Stuttgart** October 2019 – December 2021
Institute for Systems Theory and Automatic Control

Assistant Professor, **Queen's University** July 2013 – July 2019
Department of Mathematics and Statistics

Ontario/Baden-Württemberg Visiting Faculty, **University of Stuttgart** Summer 2016
Institute for Systems Theory and Automatic Control

Postdoctoral Research Associate, **University of Illinois, Urbana-Champaign** March 2012 – July 2013
Coordinated Science Laboratory
Department of Electrical and Computer Engineering

Postdoctoral Research Associate, **University of California San Diego** September 2009 – March 2012
Jacobs School of Engineering
Department of Mechanical and Aerospace Engineering

EDUCATION

Ph.D., Mathematics
Queen's University, Kingston, ON, Canada October 2009

B.Sc. and M.Sc., Mechanical Engineering (Dynamics and Control)
Shiraz University, Shiraz, Iran May 2005

RESEARCH INTERESTS

Decision Theory: systems and control; stability of discrete-time/continuous-time dynamical systems; autonomy; networked control systems; cyber-physical systems; robotic networks; sensor networks; discontinuous dynamical systems; nonlinear and geometric control; controllability of partial differential equations; economic dispatch of energy in networked power systems; identification and adaptation

Machine Learning and Optimization Theory: mathematical theory of neural networks; reinforcement learning; decentralized optimization; submodular optimization; online learning; continuous-time optimization algorithms; optimal transportation theory

Social Networks: opinion dynamics; diffusion models; reinforcement schemes; random graphs

Game Theory and Economics: game theory and strategic interactions; market design in distributed settings; learning in games

Stochastic Processes and Probability Theory: stochastic reinforcement processes, stochastic differential equations and control; rough path theory

Global Analysis: applied differential geometry; exterior differential systems; Lie theory, Riemannian geometry; geometric theory of partial differential equations

AWARDS AND HONORS

Canadian Society of Information Theory Best Paper Award 2022
Best conference paper that has been accepted by either the Biennial Symposium on Communications (BSC) or the Canadian Workshop on Information Theory (CWIT)

SIAG/CST Best SICON Paper Prize 2021 2021
Awarded to the author(s) of the two most outstanding papers, as determined by the prize committee, published in the SIAM Journal on Control and Optimization (SICON) in the three calendar years before the award year

Booz Allen Hamilton Distinguished Colloquium Lecture, University of Maryland 2020

Alexander von Humboldt Fellowship for experienced researchers 2019

The 2019 CAIMS-PIMS Early Career Award 2019
Jointly awarded by the Canadian Applied & Industrial Math Society and the Pacific Institute for the Mathematical Sciences

NSERC Discovery Accelerator Supplement 2019
supplemental funding with 125 recipients among over 3000 applicants in Canada

Finalist for Best Paper Award (as a supervisor), American Control Conference 2017

Class of 2020 Engineering and Applied Science First Year Instructor Teaching Award 2017

Class of 2018 Engineering and Applied Science First Year Instructor Teaching Award 2015

Shortlisted for the Frank Knox Award for Excellence in Teaching 2014

RESEARCH GRANTS

National Science Foundation
Structural Frameworks for Output Control of Continuum Ensemble Systems (with Xudong Chen) *2023*

National Science Foundation
Formally correct deep perception for cyber-physical systems (with Paulo Tabuada) *2022*

Fields Centre for Quantitative Analysis and Modeling
co-PI of one of the six labs 2018-2021

Alexander von Humboldt Fellowship for experienced researchers 2019-2020

Ontario/Baden-Württemberg Exchange Program May-July 2016
visiting the Institute for Systems Theory and Automatic Control, University of Stuttgart

NSERC Discovery Grant	2014-
NSERC Discovery Accelerator Supplement	2019
Senate Advisory Research Committee Grant	2014-2015

ADMINISTRATIVE ACTIVITES

UCLA Samueli Faculty Executive Committee	*2022-2025*
Chair, Honors Committee, UCLA Samueli	*2023-2024*
Colloquium Chair, UCLA	*2022*
Signals and Systems Graduate Admissions Committee, UCLA	*2022-*
Chair, CAIMS-PIMS Early Career Award	*2021-*
CAIMS-PIMS Early Career Award Committee	*2019-*
Postdoctoral Committee, Queen's University	2017-2018
Appointment Core Committee, Queen's University	2015-2016
Chair, Advisory Committee on Policy Queen's University	2016-2017
Advisory Committee on Policy, Queen's University	2015-2017
First Year Engineering Curriculum Review Committee (FYCRC), Queen's University	2014-2015
Graduate Attribute Project Planning Committee (GAPPC), Queen's University	2014-2015
Appointment Core Committee, Queen's University	2014-2015
Interviewing for Academia and Mock Interview Practice, School of Graduate Studies	2014
Graduate committee, Queen's University	2014-2016
Math & Stats Colloquium Chair, Queen's University	2014-2015
Ontario Graduate Scholarship Reviewer, Queen's University	2014,2016,2018
Major Undergraduate Admission Award Reviewer, Queen's University	2013-2015,2018
Judge, Andrina McCulloch Public Speaking competition,	2014, 2015
Mathematics and Engineering Committee, Queen's University	2013-2019

REVIEW, EDITORIAL DUTIES, and ORGANIZED SESSIONS AND CONFERENCES

Program Chair
Annual Canadian Applied and Industrial Mathematics Society
to be held in Kingston, ON, Canada, June 2024

Vice Program Chair
Control and Decision Conference
TBA December 2026

International Program Committee
SIAM Conference on Control and Its Applications
to be held in Philadelphia, US July 2023

IEEE CDC 2023 Best Student Paper Award Committee
Control and Decision Conference, Singapore 2023

Associate Editor:
IEEE Transactions on Control of Network Systems 2021-

Program Committee Member:
Learning for Dynamics and Control (L4DC),
UC Berkeley, ETH, and Stanford 2020-2022

Associate Editor
IEEE Control Systems Letters 2019-2022

Conference Editorial Board:
IEEE Control Systems Society 2016-2020

Scientific Committee Member:
International Young Researcher Workshop
Geometry, Mechanics, and Control 2015-
Locations: Coimbra (Portugal), Padova (Italy), Paris (France), Madrid (Spain)
Göttingen (Germany), KULeuven (Belgium)

Co-organizer (7th Biannual Meeting on System and Control Theory)
Fields Institute for Research in Mathematical Sciences Workshop
with A. Lewis, A.R. Mansouri, S. Yüksel (Queen's) 2016

Technical Program Committee:
55th Conference on Decision and Control, Las Vegas, USA 2016

Minisymposium co-organizer (Nonsmooth and variational techniques in control)
SIAM Conference on Control and its Applications, Paris, France
with R. Kipka (Queen's) 2015

Invited session organizer (Controllability of network control systems)
Control and Decision Conference, Osaka, Japan
with M-A. Belabbas (UIUC) and C. Aguilar (CSUB) 2015

Invited session organizer (Controllability of network control systems)
Control and Decision Conference, Los Angeles
with M-A. Belabbas (UIUC) and C. Aguilar (CSUB) 2014

Invited session organizer (Stabilization of network control systems)
Control and Decision Conference, Los Angeles
with M-A. Belabbas (UIUC) and C. Aguilar (CSUB) 2014

Minisymposium co-organizer (Adversarial networks: learning and information exploitation)
SIAM Conference on Control and its Applications, Baltimore
with J. Cortes (UCSD) 2011

Tutorials Chair:
27th Biennial Symposium on Communications Conference
Kingston, Canada 2014

NSERC Discovery Grants Reviewer 2016-

Reviewer for:
Journal of Nonlinear Analysis, IEEE Transactions on Network Science and Engineering, IEEE Control Systems Letters, European Journal of Operational Research, Journal on Special Matrices, IEEE Transaction

on Signal Processing, Open Access Game Theory Journal, SIAM Journal on Control and Optimization, IEEE Transaction on Cybernetics: Systems, IEEE Transaction on Automatic Control, IEEE Transactions on Control of Network Systems, IEEE Transaction on Power Systems, IEEE Transactions on Energy Conversion, Automatica, European Journal of Control, Journal of Geometric Mechanics, Mathematics of Control, Signals, and Systems, IEEE Journal of Robotics and Automation, Journal of Systems, Control and Communication, ASME Journal of Dynamic Systems, Measurement and Control, Nonlinear Dynamics, Computational and Applied Mathematics, IEEE Transactions on Control Systems Technology, Control Systems Magazine, Annual Conference on Neural Information Processing Systems (NIPS), Games: Advances in Evolutionary Game Theory and Applications, IEEE Conference on Decision and Control, American Control Conference, IEEE/RSJ Conference on Intelligent Robots and Systems, IEEE Multi-conference on Systems and Control, International Federation of Automatic Control Conferences, Canadian Biennial Symposium on Communications, Journal of Dynamical and Control Systems, NeurIPS, ICML

Book Reviews:
Springer, CRC Press (Taylor and Francis Group), Annual Reviews in Control

INVITED TALKS AND SEMINARS

Invited talk, **International Congress on Industrial and Applied Mathematics**, Tokyo August 2023
Invited speaker, **Banff International Research Station**, Banff June 2023
Geometry, Topology and Control System Design
Colloquium, **University of California, San Diego** June 2023
Invited speaker, **Information Theory and Applications Workshop**, San Diego February 2023
Seminar talk, **University of Colorado, Boulder** December 2022
Seminar talk, **University of Illinois, Urbana-Champaign** October 2022
Seminar talk, **University of Bologna** September 2022
Seminar talk, **École des Mines de Paris** May 2022
Applied Math Colloquium, **University of California, Los Angeles** May 2022
Seminar talk, **University of California, Riverside** April 2022
Seminar talk, **University of California, Santa Barbara** January 2022
Seminar talk, **Center for Artificial Intelligence, RWTH Aachen University** November 2021
Seminar talk, **University of California Los Angeles** October 2021
Seminar talk, **University of California Los Angeles** November 2021
IEEE-Eta Kappa Nu, Gamma Chapter
Seminar talk, **Technion** April 2021
Seminar talk, **Grenoble** February 2021
Seminar talk, **Technical University of Munich** January 2021
Seminar talk, **Peking University** August 2020
Colloquium, **University of Maryland** October 2020
Booz Allen Hamilton Distinguished Colloquium Lecture
Seminar talk, **University of Passau** July 2020
Seminar talk, **ETH Zürich** January 2020
Colloquium, **University of California Los Angeles** January 2020
Seminar talk, **University of Stuttgart**, October 2019
Colloquium talk, **University of Waterloo** September 2019
Colloquium talk, **Queen's University** September 2019
Plenary talk, **CAIMS Annual meeting**, Whistler June 2019
Canadian Society of Applied and Industrial Mathematics
Seminar talk, **University of California, San Diego** May 2018
Colloquium, **University of Stuttgart** July 2017
Colloquium, **University of Toronto** April 2017
Seminar talk, **University of Salento**, Lecce June 2016
Colloquium, **University of Stuttgart** June 2016

Colloquium, **University of Colorado, Boulder** April 2016
Invited speaker, **Allerton Conference** Monticello, Illinois October 2016
Communication, Control, and Computing
Invited speaker, **Allerton Conference** Monticello, Illinois October 2015
Communication, Control, and Computing
Seminar talk, **Concordia University** December 2014
Invited talk, **McMaster University** December 2014
The Canadian Mathematical Society Meeting,
Invited speaker, **Allerton Conference** Monticello, Illinois October 2014
Communication, Control, and Computing
Invited speaker, **Banff International Research Station** October 2014
Optimal Cooperation, Communication, and Learning in Decentralized Systems
Invited speaker, **University of Waterloo** May 2014
Sixth Biannual Meeting on Systems and Control Theory
Seminar talk, **McGill University** November, 2013
Centre for Intelligent Machines
Invited seminar, **University of Washington St. Louis** April 2013
Invited seminar, **Technical University of Munich** April 2013
Invited seminar, **Queen's University** March 2013
Invited seminar, **Harvard University** March 2013
Invited seminar, **University of California Los Angeles** March 2013
Invited seminar, **Groningen University** February 2013
Invited seminar, **Georgia Institute of Technology** February 2013
Invited seminar, **Utah State University** February 2013

INVITED RESEARCH VISITS/WORKSHOPS AND SYMPOSIUMS

Southern California Applied Math Symposium, UC Irvine April 2023
Information Theory and ApplicationsWorkshop, UC San Diego Jan 2023
Southern California Control Workshop UC Irvine April 2022
Research Visit RWTH Aachen University November 2021
Learning for Dynamics and Control, MIT May 2019
Princeton Day of Optimization, Princeton University Sep 2018
Research Visit, Electrical and Computer Engineering, UC San Diego June 2018
Visiting Faculty, Institute for Systems Theory and Automatic Control, University of Stuttgart July 2017
Jean-Michel Coron's 60th birthday, Institute Henri Poincare, Paris, France June 2016
Visiting Faculty, Institute for Systems Theory and Automatic Control, University of Stuttgart July 2016
Research Visit, Department of Electrical, Computer, and Energy Engineering,
University of Colorado, Boulder April 2016
Nonlinear Control and Geometry, Banach Centre, Poland August 2015
Optimal Cooperation, Communication, and Learning in Decentralized Systems,
Banff International Research Station October 2014
Research Visit, Mechanical and Aerospace, UC San Diego, San Diego June 2014
Symposium on Mathematical Theory of Networks and Systems,Groningen July 2014
The 27th Biennial Symposium on Communications, Kingston May 2014
Sixth Biennial Meeting on Systems and Control Theory, University of Waterloo May 2014
The 2nd Midwest Workshop on Control and Game Theory, University of Notre Dame 2013
Workshop on Information and Decision in Social Networks, MIT 2012
The 1st Midwest Workshop on Control and Game Theory, UIUC 2012
Symposium on Emerging Topics in Control and Modelling, UIUC 2012
3rd IFAC Workshop on Distributed Estimation and Control in Networked Systems, Santa Barbara 2012
Initiative for Mathematical Sciences and Engineering, UIUC , 2012
Midwest Workshop on Control and Game Theory, UIUC 2012

Southern California Control Workshop, UC Los Angeles	2012
Southern California Control Workshop, UC Riverside	2011
Southern California Control Workshop, UC Santa Barbara	2010
Symposium on Mathematical Theory of Networks and Systems, Blacksburg	2006
A Celebration of Raoul Bott's Legacy in Mathematics, Montreal	2007

MEMBERSHIPS

- American Mathematic Society (AMS)
- Institute for Operations Research and the Management Sciences (INFORMS)
- The Canadian Applied and Industrial Mathematics Society (CAIMS)
- Society of Industrial and Applied Mathematics (SIAM)
- Institute of Electrical and Electronics Engineers (IEEE)
- IEEE Control Systems Society

TEACHING ACTIVITES

ECE242, Nonlinear Dynamics, *UCLA*	*Winter 2023*
ECE239AS, Decision Making in Stochastic Systems, *UCLA*	*Fall 2022*
ECE239AS, Control, Identification, and Learning Algorithms, *UCLA*	*Spring 2022*
ECE141, Principles of Feedback Control, *UCLA*	*Winter 2022*
MTHE 332, Introduction to Control Systems, *Queen's*	*Winter 2019*
MTHE 430, Control Systems, *Queen's*	*Fall 2018*
MTHE 332, Introduction to Control Systems, *Queen's*	*Winter 2018*
APSC 174, Linear Algebra, *Queen's*	*Winter 2018*
MATH 932, Calculus of Variations and Optimal Control, *Queen's*	*Winter 2017*
MTHE 332, Introduction to Control Systems, *Queen's*	*Winter 2017*
APSC 174, Linear Algebra, *Queen's*	*Winter 2017*
MTHE 434, Optimization Theory and Applications, *Queen's*	*Fall 2016*
APSC 200, Engineering Design Project, *Queen's*	*Fall 2016*
MTHE 332, Introduction to Control Systems, *Queen's*	*Winter 2016*
APSC 174, Linear Algebra, *Queen's*	*Winter 2016*
MTHE 434, Optimization Theory and Applications, *Queen's*	*Fall 2015*
APSC 200, Engineering Design Project, *Queen's*	*Fall 2015*
APSC 174, Linear Algebra, *Queen's*	*Winter 2015*
MTHE 430, Control Systems, *Queen's*	*Fall 2014*
APSC 200, Engineering Design Project, *Queen's*	*Fall 2014*
MTHE 335, Methods in Applied Mathematics (Distribution Theory), *Queen's*	*Winter 2014*
APSC 200, Engineering Design Project, *Queen's*	*Fall 2013*
MTHE 334, Methods in Applied Mathematics (Signals and Systems), *Queen's*	*Fall 2013*
ECE 580, Optimization by vector space methods, *UIUC (Guest lecturer)*	*Fall 2012*
MATH 235, Differential Equations, *Queen's*	*Fall 2008*
MATH 235, Differential Equations, *Queen's*	*Fall 2007*

SUPERVISORY ACTIVITIES

Current Group Members:

- *Postdoctoral Researchers:*
- *Graduate Students:*

1. **Amirreza Neshaei Moghaddam**, Ph.D., 2022-
   Topic: Convergence rate analysis in reinforcement learning
2. **Annika Fürnsinn**, Ph.D., 2019-
   Topic: Generalized Lyapunov functions and model predictive control

Alumni:

- *Postdoctoral Researchers:*

1. **Dr. Mohammad Akbari**, (online learning and control) 2022-2023
   Current Placement: Machine learning consultant
2. **Dr. Kexue Zhang**, (delayed differential equations, event-triggered control systems) 2017-2019
   Current Placement: Assistant Professor, Department of Mathematics and Statistics, Queen's University
3. **Dr. Robert Kipka**, (co-advised, infinite-dimensional optimal control), 2014-2016
   Current Placement: Associate Professor, Department of Mathematical Sciences, Lake Superior State University

- *Graduate Students:*

1. **Somya Singh**, Ph.D. 2018-2023
   Topic: Interacting Polya urns
2. **Justin Veiner** , M.Sc. 2021-2023
   Topic: Generative adversarial networks based on a general parameterized family of loss functions
3. **Daniel Adu Owusu**, Ph.D. 2017-2022
   Topic: Optimal transport in mechanism design, differential games and ensemble control
   Placement: Assistant Professor (limited term), Department of Mathematics, University of Georgia
4. **Mohammad Akbari**, Ph.D., 2017-2022
   Topic: Online learning in control theory
   Placement: Postdoctoral scholar, Queen's University
5. **Adam Gronowski**, M.Sc. 2020-2022
   Topic: Information bottleneck methods for fairness and privacy in machine learning
   Awards: Vector Institute Scholarship
   Canadian Society of Information Theory Best Paper Award *Placement*: co-founder of capsa AI
6. **Xu Chen**, M.Sc, (with C. Ebenbauer at Stuttgart University), 2020-2021
   Thesis: Stability analysis of the ADAM algorithm
   Placement: Ph.D. student, *Aachen University*
7. **Himesh Bhatia** , M.Sc. 2018-2020
   Topic: Generative adversarial networks
   Awards: Dorrance Family Award
8. **Greg Harrington**, M.Sc. 2017-2020
   Topic: Optimization policies for Polya contagion networks)
   Awards: Queen's Frank E Smith, Queen Elizabeth II Graduate Scholarship in Science and Technology *Placement*: Ciena
9. **Michael McCreesh**, M.Sc., 2017-2019
   Topic: Accelerated convergence of saddle-point dynamics
   Awards: NSERC, Queen's Tri Council, OGS
   Placement: Ph.D. student, *Mechanical and Aerospace Engineering, UC San Diego*
10. **Simon Michalowsky**, visiting Ph.D. student 2015-2019
    Institute for Systems Theory and Automatic Control (University of Stuttgart)
    Topic: Lie bracket approximation for distributed optimization

11. **Scott Kyle**, M.Sc. 2017-2019
    Topic: Control of nonholonomic mechanical systems using virtual surfaces
    Placement: MacLean Engineering

12. **Diego Cardenas**, M.Sc. 2018-2019
    Topic: On the Kalman filter with intermittent observations
    Placement: Ph.D. student, *University of Agder, Norway*

13. **Connor Boyd**, M.Sc. 2017-2018
    Topic: Vakonomic and non-holonomic dynamics *Placement*: Machine Learning Developer, BlueCat

14. **Alireza Samsamshariat**, M.Sc. 2017-2018
    Topic: Martingale optimal transportation
    Placement: Data Scientist, Zynga

15. **Mikhail Hayhoe**, M.Sc. 2015-2017
    Thesis: A Polya urn stochastic model for the analysis and control of epidemics on networks
    Awards: **ACC Best Paper Award Finalist**, Queen's F. E. Smith, NSERC Queen's Graduate Award
    Placement: Ph.D. student, *Electrical and Systems Engineering, University of Pennsylvania*

16. **Jeremy Coulson**, M.Sc. 2015-2017
    Thesis: Average controllability of random heat equations
    Awards: NSERC, Queen's Tri Council, OGS, Queen's H. K. Walter
    Placement: Ph.D. student, *Automatic Control Laboratory, ETH Zurich*
    Assistant Professor, Electrical & Computer Engineering, University of Wisconsin-Madison

17. **Drew Steeves**, M.Sc. 2015-
    Thesis: Controllability of underactuated coupled parabolic systems
    Awards: Queen's Senator Frank Carrel, Queen's Graduate Award, Queen Elizabeth II Graduate Scholarship in Science and Technology
    Placement: Ph.D. student, *Mechanical and Aerospace Engineering, UC San Diego*
    AV Planning & Prediction, Nissan

18. **Pouya Rezaeinia**, M.Sc. 2015-2017
    Thesis: Push-sum algorithm on time-varying random graphs
    Placement: Ph.D. student, *Sauder Business School, UBC*
    Management Consultant at CPCS

19. **Daniel Adu Owusu**, M.Sc., 2013-2014
    Project: On ensemble control systems
    Placement: Ph.D. student *Mathematics, Queen's University* Limited term Assistant Professor, Department of Mathematics, University of Georgia

20. **Mohammad Akbari**, M.Sc. 2013-2015
    Thesis: Distributed online optimization on time-varying networks
    Placement: Ph.D. student *Mathematics, Queen's University*

21. **Babak Beheshti Vadeqan**, M.Sc. 2014-2016
    Thesis: Geometry of Dirac Operators,
    Placement: Ph.D. student *Mathematics, Western University*

22. **Ali Khanafer**, Ph.D. (visiting student from UIUC), 2012-2014
    Thesis: Information spread in networks: games, optimal control, and stabilization
    Placement: *IBM*

- *Undergraduate Research Students:*
  - **2019-2020:**

  - Rebecca Bonham Carter (NSERC USRA)
  - Fernando Camacho (NSERC USRA)
    Project: Rough path theory
  - **2018-2019:**
  - Ian Hogeboom-Burr (Summer Work Experience Program)
    Project: Experimental design of leader-follower robotics laboratory
  - Bryony Schonewille (Summer Work Experience Program)
    Project: Experimental design of leader-follower robotics laboratory
  - Hugh Corley (Summer Work Experience Program)
    Project: Experimental design of leader-follower robotics laboratory
  - **2017-2018:**
  - Himesh Bhatia (NSERC USRA)
    Project: Passivity and self-appraisal dynamics
  - Daniel Tamming (Summer Work Experience Program)
    Project: Experimental design of leader-follower robotics laboratory
  - Fernando Camacho (Summer Work Experience Program)
    Project: Experimental design of leader-follower robotics laboratory
  - **2016-2017:**
  - Rebecca Bonham-Carter (NSERC USRA)
    Project: Extensions of sparse stable matrix systems
  - Michael McCreesh (NSERC USRA)
    Project: Metzler sparse stable matrix cones
  - Himesh Bhatia (Summer Work Experience Program)
    Project: Experimental design of leader-follower robotics laboratory
  - Stephen Chisnall (Summer Work Experience Program)
    Project: Experimental design of leader-follower robotics laboratory
  - **2015-2016:**
  - Drew Steeves (Summer Work Study Program)
    Project: Re-design of the Modern Control Laboratory
  - **2014-2015:**
  - Drew Steeves (Summer Work Experience Program)
    Project: Convergence rate of one-sided asymmetric Hegselmann-Krause dynamics
  - Jeremy Coulson (Summer Work Experience Program)
    Project: Convergence rate of one-sided asymmetric Hegselmann-Krause dynamics

- *Undergraduate Thesis Students:*
  - **2018-2019:**
  - Lachlan Devir, Chris Caromicoli, Andrew Downie, Alex Taylor (*Keyser Prize for best project*)
    Thesis: Motion planning in dynamic environments
  - Luke Chau, Simon Kersten, Thomas Huckell, Benji Christie *Thesis: Predictive control for an autonomous boat*
  - Coby Davis, Ted Bursey, Julian Gailiunas, Jason Benchetrit *Thesis: Predictive control for transportation*
  - Adam Boljkovac, Steven Lee, Patrick Chin, Jordana Sherman Motion planning in dynamic environments
  - **2016-2017:**

- Cleo Savides, Joshua Dirocco, Mareena Macpherson (*Keyser Prize for best project*)
  Thesis: Underwater source seeking using a deformable fish
- Greg Harrington, Sarah Colquhoun, Kerem Ataman, Tristen Ognibene
  Thesis: Analysis and control of contagious phenomena in networks

◇ **2015-2016:**

- Taylor Reynolds, True Wilson, Matthew Boyd (*Keyser Prize for best project*)
  Thesis: Extremum seeking control methods for nonholonomic source seeking vehicles
- Jacob Malleau, Soraya Weaver, Rehman Shivji, Aaron Short
  Thesis: Dynamic vehicle routing for UBER

◇ **2014-2015:**

- Drew Steeves, Jeremy Coulson, Ted Donnelly, Thomas Hall (*Keyser Prize for best project*)
  Thesis: Synchronization of coupled oscillators: power networks
- Ryan Farrell, Mikhail Hayhoe, Justin Ma, Mark Mahony
  Thesis: Distributed triggering strategies for deployment of autonomous mobile networks with outdated information
- Matthew Slavin, Michael Mehta, Kendra MacKay, Eve Laverty (co-supervised)
  Thesis: Formation dynamics
- John Ramsey, Daniel Potvin, Brendon Conlin (co-supervised)
  Thesis: Extending a Polya contagion process to modelling contagion in networks with finite memory
- Hannah Koke, Brynn Vadala (co-supervised)
  Thesis: Profiling Contagious Behaviour in Networks

◇ **2013-2014:**

- Marlee Vandewouw, Karin Martin (*Keyser Prize for best project*)
  Thesis: Distributed algorithms for deployment of autonomous mobile networks
- Ian Ross, Evangelian Collings, Taylor Adams
  Thesis: Formation dynamics of multi-agent systems

THESIS COMMITTEE/CANDIDACY EXAM MEMBER

- Mona Buisson Fenet, Ph.D., *École des Mines de Paris*, 2023
- Aaron John Sabu, M.Sc., *UCLA*, 2023
- Kangdi Yu, M.Sc., *UCLA*, 2023
- Jonathan Burton, Ph.D., *UCLA*, 2022
- Lucas Fraile, Ph.D., *UCLA*, 2022
- Derek Xioa, Ph.D., *UCLA*, 2022
- Muratkhan Abdirash, Ph.D., *UCLA*, 2022
- Zida Wu, Ph.D., *UCLA*, 2022
- Jan Feiling Ph.D., *University of Stuttgart*, 2021
- Ahmed Shaltut, M.Sc., *Queen's University*, 2021
- Xin Cheng, Ph.D., *Queen's University*, 2021
- Mohammad Yaali Jahromi, M.Sc., *Queen's University*, 2020
- Bora Yongacoglu, Ph.D., *Queen's University*, 2018
- Sina Sanjari, Ph.D., *Queen's University*, 2018
- Yanlei Zhang, P.hD., *Queen's University*, 2018-

- Graeme Baker, M.Sc., *Queen's University*, 2018
- Sina Sanjari, M.Sc., *Queen's University*, 2017
- Kiraseya Preusser, M.Sc., *Queen's University*, 2017
- Iman Askarian, M.Sc., *Queen's University*, 2016
- Tristan Mines, M.Sc., *Queen's University*, 2016
- Francois Seguin, Ph.D., *Queen's University*, 2016
- Judith Ebegbulem, M.Sc., (Chem-Eng),*Queen's University*, 2016
- Ryan Bennett, M.Sc. (Chem-Eng), *Queen's University*, 2015
- Khaled Hayajneh, Ph.D. (ECE), *Queen's University*, 2015
- Arghavan Modiri, M.Sc. (ECE), *Queen's University*, 2015
- Michael Cabral, M.Sc., *Queen's University*, 2014
- Hossein Mousavian, Ph.D., *Queen's University*, 2014
- Sousan Beigi Harchegani, M.Sc. (ECE), *Queen's University*, 2014
- Naci Saldi, Ph.D., *Queen's University*, 2013
- Saber Jafarpour, Ph.D., *Queen's University*, 2013
- Emmanuel Ogbe (Chem-Eng), Ph.D., *Queen's University*, 2013
- Joshua Pohlkamp-Hartt, Ph.D., *Queen's University*, 2016
- Youness Aliyari, Ph.D., *Queen's University*, 2013
- Melkior Ornik, M.Sc., *Queen's University*, 2013

PUBLICATIONS

PREPRINTS

1. Marc Weber, Christian Ebenbauer, and *Bahman Gharesifard* Alternatives to Nussbaum control, working paper, 2022

2. Pouya Rezaienia and *Bahman Gharesifard*, Tamas Linder, Distributed optimization with uncertain communications, preprint available on arXiv, 2022

3. *Bahman Gharesifard* and Andrew D. Lewis, The trouble with imaginary eigenvalues. Optimal control, controllability, frequency response, preprint, March 2020

4. *Bahman Gharesifard*, and Xudong Chen, Characterization of structural averaged controllability of linear ensemble systems, in submission to **IEEE Transactions on Automatic Control**, draft available, 2023

5. Somya Singh, Fady Alajaji, and *Bahman Gharesifard* A preferential attachment model based on a Pólya urn with increasing colors, in submission to **Network Science**, Cambridge University Press, 2023

JOURNALS

1. Justin Veiner, Fady Alajaji, and *Bahman Gharesifard*, A unifying generator loss function for generative adversarial networks, **SIAM Journal on Mathematics of Data Science**, submitted, 2023

2. Alex Olshevsky and *Bahman Gharesifard*, A small-gain analysis of single timescale actor critic, **SIAM Journal on Control and Optimization**, to appear, 2023

3. Mohammad Akbari, *Bahman Gharesifard*, and Tamas Linder, Logarithmic regret for adaptive control of linear quadratic regulators using hints, **Journal of Machine Learning Research**, submitted, 2022

4. Annika Fürnsinn, Christian Ebenbauer, and *Bahman Gharesifard*, Relaxed feasibility and stability criteria for flexible-step model predictive control, **IEEE Control Systems Letters**, to appear, 2023

5. Matteo Marchi, Jonathan Bunton, *Bahman Gharesifard*, Paulo Tabuada, Point cloud registration with sharp performance bounds, **IEEE Control Systems Letters**, to appear, 2023

6. Annika Fürnsinn, Christian Ebenbauer, and *Bahman Gharesifard*, Flexible-step model predictive control based on generalized Lyapunov functions, **Automatica**, provisionally accepted, 2023

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