Jorge A. Méndez

University of Pennsylvania	Mobile phone: +1 (202) 520-0387
Department of Computer and Information Science	E-mail: mendezme@seas.upenn.edu
GRASP Laboratory	Website: https://jorge-a-mendez.github.io
3300 Walnut Street, Philadelphia, PA 19104	

RESEARCH INTERESTS

My primary research interest is the creation of versatile artificially intelligent systems that learn to accumulate knowledge over their lifetimes. I focus on the question of how agents can decompose the complex knowledge required to model a lifelong data stream into simpler units that can be adapted and reused in the future. My work applies these methods to computer vision, robotics, and natural language.

EDUCATION

May 2022	**Ph.D. in computer and information science** University of Pennsylvania Thesis: *Lifelong machine learning of functionally compositional structures* Advisor: Eric Eaton. Committee: Dan Roth, Kostas Daniilidis, Pratik Chaudhari, and George Konidaris.
Aug. 2018	**M.S.E. in robotics** University of Pennsylvania Advisor: Eric Eaton.
Apr. 2016	**B.S. *summa cum laude* in electronics engineering (*Ingeniero electrónico*)** Universidad Simón Bolívar, Venezuela Thesis: *Implementation of algorithms and debugging for STMicroelectronics wearable platform* (Desarrollo de algoritmos y depuración de la plataforma ponible de STMicroelectronics). [**Awarded "Exceptionally Good" distinction**] Advisors: Daniele Caltabiano (STMicroelectronics), Giacomo Boracchi (Politecnico di Milano), Novel Certad (Universidad Simón Bolívar).
2014 – 2015	**Exchange student, graduate courses in computer science** Politecnico di Milano, Italy

HONORS AND AWARDS

- MIT School of Engineering Postdoctoral Fellowship for Engineering Excellence 2022
- 3rd place award of the Two Sigma Diversity PhD Fellowship 2021 (**$5,000**).
- **Best paper** award at the 4th Lifelong Learning Workshop at ICML 2020 for "Lifelong learning of factored policies via policy gradients."
- **Outstanding reviewer** or equivalent at ICLR 2021, ICML 2021, and NeurIPS 2021.
- Exceptionally Good Thesis Award at Universidad Simón Bolívar for "Implementation of algorithms and debugging for STMicroelectronics wearable platform."
- Top 30 GPAs at Universidad Simón Bolívar (2015, 2016) for having one of the best 30 GPAs among all students in the last two years across the university.
- Top 10 GPAs at Universidad Simón Bolívar (3 / 750) of the incoming cohort in 2010.
- Top 50 Entrance Placement Exams at Universidad Simón Bolívar (25 / 7409) in 2010.

PUBLICATIONS

Preprints

[1] Boyu Wang, **Jorge A. Méndez**, Changjian Shui, Fan Zhou, Di Wu, Christian Gagné, and Eric Eaton. (2022). "Gap Minimization for Knowledge Sharing and Transfer." In preparation for submission to the *Journal of Machine Learning Research* (JMLR).

Conference Papers

[2] **Jorge A. Méndez***, Marcel Hussing*, Meghna Gummadi, and Eric Eaton. (2022). "CompoSuite: A Compositional Reinforcement Learning Benchmark." To appear in *Conference on Lifelong Learning Agents* (CoLLAs-22).

[3] Meghna Gummadi, David Kent, **Jorge A. Méndez**, and Eric Eaton. (2022). "SHELS: Exclusive Feature Sets for Novelty Detection and Continual Learning Without Class Boundaries." To appear in *Conference on Lifelong Learning Agents* (CoLLAs-22).

[4] **Jorge A. Méndez**, Harm van Seijen, and Eric Eaton. (2022). "Modular Lifelong Reinforcement Learning via Neural Composition." In *Tenth International Conference on Learning Representations* (ICLR-22).

[5] **Jorge A. Méndez** and Eric Eaton. (2021). "Lifelong Learning of Compositional Structures." *Ninth International Conference on Learning Representations (ICLR-21)*. [acceptance rate: 29%; invited talk at ContinualAI October Online Meetup]

[6] **Jorge A. Méndez**, Boyu Wang, Eric Eaton. (2020). "Lifelong Policy Gradient of Factored Policies for Faster Training Without Forgetting." *Advances in Neural Information Processing Systems 33 (NeurIPS-20)*. [acceptance rate: 20%]

[7] Boyu Wang, **Jorge A. Méndez**, Mingbo Cai, and Eric Eaton. (2019). "Transfer Learning via Minimizing the Performance Gap Between Domains." *Advances in Neural Information Processing Systems 32 (NeurIPS-19)*. [acceptance rate: 21%]

[8] **Jorge A. Méndez**, Shashank Shivkumar, and Eric Eaton. (2018). "Lifelong Inverse Reinforcement Learning." *Advances in Neural Information Processing Systems 31 (NeurIPS-18)*. [acceptance rate: 21%]

Workshop Papers

[9] **Jorge A. Méndez** and Eric Eaton. (2020). "Lifelong Learning of Factored Policies via Policy Gradients." *4th Lifelong Learning Workshop at the International Conference on Machine Learning (LML-ICML-20)*. [**best paper award**; contributed talk—oral acceptance rate: 10%]

[10] **Jorge A. Méndez** and Eric Eaton. (2020). "A General Framework for Continual Learning of Compositional Structures." *Continual Learning Workshop at the International Conference on Machine Learning (CL-ICML-20)*.

[11] **Jorge A. Méndez**, Alborz Geramifard, Mohammad Ghavamzadeh, and Bing Liu. (2019). "Reinforcement Learning of Multi-Domain Dialog Policies via Action Embeddings." *Third Conversational AI Workshop at Neural Information Processing Systems 33 (ConvAI-NeurIPS-19)*. [contributed talk—oral acceptance rate: 16%]

RESEARCH EXPERIENCE

University of Pennsylvania

May 2022-Present	*Postdoctoral Researcher* with Eric Eaton, GRASP Lab
2016 –2022	*Research Assistant* with Eric Eaton, GRASP Lab

Facebook AI Research

June 2021 – Sep. 2021   *Research Intern* with Arthur Szlam and Ludovic Denoyer

Microsoft Research, Montréal

June 2020 – Sep. 2020   *Research Intern* with Harm van Seijen

Facebook AI Applied Research

May 2019 – Aug. 2019   *Research Intern* with Alborz Geramifard and Mohammad
Ghavamzadeh

TEACHING EXPERIENCE

University of Pennsylvania

Fall-19, Spring-20   *Instructor* for CIS 192 Python Programming

Fall-17   *Head Teaching Assistant* for CIS 419/519 Intro. to Machine
Learning

Universidad Simón Bolívar

Fall-13,14, Winter-13,14,16,   *Teaching Assistant* for CI 2125 Programming I
Spring-13,14

Spring-12   *Teaching Assistant* for EC 2272 Electric Circuit Analysis II

Winter-12   *Teaching Assistant* for MA 1112 Calculus II

Fall-11   *Teaching Assistant* for MA 1111 Calculus I

MENTORING EXPERIENCE

Ph.D. Students
- Meghna Gummadi, Penn CIS (2019-present): novelty detection and compensation
- Marcel Hussing, Penn CIS (2021-present): compositional reinforcement learning

Master's Students
- Shashank Shivkumar (2016-2018): lifelong learning from demonstration (Master's thesis, NeurIPS paper). Now: Advanced AI Engineer, Honeywell
- Varun Gupta (2017-2018): lifelong reinforcement learning. Now: Perception Engineer, Rivian
- Srinath Rajagopalan (2019): lifelong reinforcement learning. Now: Software Engineer, Amazon Robotics
- Wenxuan Zhang (2020-2021): lifelong non-stationary learning (Master's thesis)

Undergraduate Students
- Monica Vyavahare (2017): lifelong learning from demonstration. Now: Software Engineer, Amazon Robotics
- Spencer Solit (2021): compositional reinforcement learning

OTHER WORK EXPERIENCE

Capital One

May 2017 – Aug. 2017   *Data Science Intern*, Credit Card Data Science Division

STMicroelectronics

Feb. 2015 – Jul. 2015 *Research & Development Intern*, Advanced Systems Technology Group

PROFESSIONAL SERVICE

Conference Paper Reviewing
- ICML, International Conference on Machine Learning (2021[†])
- ICLR, International Conference on Learning Representations (2021[†], 2022[†])
- NeurIPS, Conference on Neural Information Processing Systems (2020, 2021[†])
- ICRA / RA-L, International Conference on Robotics and Automation (2020, 2021)
- Conference paper co-reviewer:
    - IJCAI, International Joint Conference on Artificial Intelligence (2017, 2018, 2019)
    - ICML, International Conference on Machine Learning (2018)
    - NeurIPS, Neural Information Processing Systems (2018)
    - AAAI, Conference on Artificial Intelligence (2019)

[†] Outstanding reviewer

Workshop Proposal Reviewing
- AAAI, Conference on Artificial Intelligence (2021)