

Curriculum Vitae – Liv Galliker d’Aliberti (They/Them)

U.S. Citizen, TS/SCI Full Scope Clearance

CONTACT

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RESEARCH INTERESTS

Developing machine learning algorithms that can efficiently create decision-making agents that are both performant and bound by a code of ethics. Privacy-Preserving Machine Learning, Reinforcement Learning, Progressive Learning, Encoding Schemes for Machine Learning.

EDUCATION

Princeton University Ph.D. in Computer Science, Princeton University Graduate School, Princeton, N.J., U.S.A. (2024-Present). Member of the RL Lab, advised by Benjamin Eysenbach.

Georgetown University M.S. in Mathematics & Statistics, Graduate College of Arts & Sciences, Washington, D.C., U.S.A. (2018-2020).

Georgetown University Honors B.A. in History, Mathematics B.S., Minor in Economics, College of Arts & Sciences, Washington, D.C., USA (2013-2017).

EXPERIENCE

Leidos Inc. Senior Artificial Intelligence and Machine Learning Researcher at Leidos, leading artificial intelligence projects and junior staff. Main projects: C4ISR Graph-based Reinforcement Learning System, Privacy-Preserving Computation/Privacy Enhancing Technologies, Rapid Progressive Learning-based Object Detection, ML Engineering, AutoML, Hyperdimensional Computing, Intern Program Management. Arlington, Virginia, USA (2019-2024).

- **2024 Reinforcement Learning for Decision Support Principal Investigator:** a \$1.2M corporate home office investment into robust, scalable, flexible reinforcement learning techniques. Involved in the shaping of nearly \$5B in corporate captures, submission of \$25M in proposals, and supporting \$7B in existing contracts.
- **2024 Privacy Enhancing Technologies Principal Investigator:** a \$350K corporate home office investment into the development of Leidos products that include privacy protection mechanisms. Involved in the submission of \$3M in proposals.
- **2022-2024 Associate Solutions Architect:** a member of Leidos’s technical talent leadership responsible for developing and delivering technically differentiated solutions at enterprise scale.
- **2020-2022 Intern Program Developer and Lead:** developed the first AIML Accelerator Internship program, including the hiring, onboarding, and management of department interns. Grew the program from 5 interns in year 1

to 12 interns in year 3. Successfully transitioned program to stable, recurring annual status. Department hires 3-5 program interns annually.

Model B. Data Analyst at Model B. Developed a data ingestion and analytics platform for large, campaign-based, cross-platform marketing data analytics, Washington, D.C., USA (2017-2019).

TEACHING

Modern Software Concepts in Python 605.256 at John Hopkins University, Whiting School of Engineering, (Summer 2024, Fall 2024) – primary developer of curriculum and educational materials.

Introduction to Programming Using Python – 605.206 at John Hopkins University, Whiting School of Engineering, (Spring 2023, Summer 2023, Fall 2023, Summer 2024, Fall 2024).

Mathematical/Statistical Computing – MATH 510 at Georgetown University, Teaching Assistant, Graduate School of Mathematics & Statistics, (Fall 2018, Spring 2019, Fall 2019).

Data Mining – MATH-656 at Georgetown University, Teaching Assistant, Graduate School of Mathematics & Statistics, (Fall 2019).

Algebra, Geometry, Linear Algebra private tutoring, (2017-2019).

PUBLICATIONS

C. Clark, K. Albarado, J. Scott, C. Bernard, J. Wilson, **L. d’Aliberti**, “*Explainability for Unmanned Aerial Vehicle Control via Multi-Objective Reinforcement Learning*”, IEEE Aerospace. (2024) (Pre-print)

L. d’Aliberti, M. Clark, “*Preserving Patient Privacy during Computation over Shared Electronic Health Record Data*”, Springer Nature Journal of Medical Systems. (2022). doi.org/10.1007/s10916-022-01865-5

E. Gronberg, **L. d’Aliberti**, M. Saebo, A. Hook, “*BlindFL: Segmented Federated Learning with Fully Homomorphic Encryption*”, Proceedings on Privacy Enhancing Technologies (PoPet 2025). (Pre-print)

L. d’Aliberti, E. Gronberg, J. Kovba, “*Privacy-Enhancing Technologies for AI Systems: A Tutorial*”, In Proceedings of the 10th ACM International Workshop on Security and Privacy Analytics (IWSPA 2024). Association for Computing Machinery. Doi.org/10.1145/3643651.3659889

V. Miranda, **L. d’Aliberti**, “*Hyperdimensional Computing Encoding Schemes for Improved Image Classification*”, IEEE 2022 International Symposium on Technologies for Homeland Security. (2022). doi.org/10.1109/HST56032.2022.10024980

L. d’Aliberti, J. Kovba, M. Gulati, S. Hoda, B. Snively, “*Enabling fully homomorphic encryption with Amazon SageMaker endpoints for secure, real-time inferencing*”, AWS Machine Learning Blog. (2023). <https://aws.amazon.com/blogs/machine-learning/enable-fully-homomorphic-encryption-with-amazon-sagemaker-endpoints-for-secure-real-time-inferencing/>

J. Miles, **L. d’Aliberti**, C. Renzo, J. Kovba “*Large language model inference over confidential data using AWS Nitro Enclaves*”. (2024) <https://aws.amazon.com/blogs/>

machine-learning/large-language-model-inference-over-confidential-data-using-aws-nitro-enclaves/

L. d'Aliberti, E. Gronberg, J. Kovba, “*Privacy-Enhancing Technologies: Protecting Data In Use*”, Leidos Insights Blog. (2023). [https://www.leidos.com/sites/leidos/files/2023-07/D-23-15149_Privacy-Enhancing%20Technologies%20\(PET\)%20White%20Paper.pdf](https://www.leidos.com/sites/leidos/files/2023-07/D-23-15149_Privacy-Enhancing%20Technologies%20(PET)%20White%20Paper.pdf)

L. d'Aliberti, T. Boggs, “*Leidos Researchers Compete to Develop the Best Unmanned Surface Vessel Models*”, Leidos Insights Blog. (2023). <https://www.leidos.com/insights/leidos-researchers-compete-develop-best-unmanned-surface-vessel-model>

S. Kareff, **L. d'Aliberti**, N. Duong, “*Effects of a Resident-Led Subject Exam Review on Mean Scores of Internal Medicine Subject Exam: a Case-control Study*”, Med. Scie. Edu. 31, 4952 (2020). doi.org/10.1007/s40670-020-01157-y

S. Woo, K. Johnson, R. Xi, **L. d'Aliberti**, N. Duong, J. Jennings, “*Pre-Endoscopic Intubation for Emergent GI Bleeding Associated With Increased Adverse Outcomes*”, The American Journal of Gastroenterology (2020). doi.org/10.14309/01.ajg.0000704332.17755.ab

SELECTED TALKS

Privacy Enhancing Technologies, AWS Public Sector, (2024).

Hampton University RL, Introduction to RL Techniques, (2023).

RL for C4ISR Systems at Leidos, Leidos Business Development Forum, (2023).

Reinforcement Learning, Hampton University, (2023).

Privacy Enhancing Technologies, Trusted Computing Center of Excellence Conference, (2023).

Reinforcement Learning for C4ISR Systems, Leidosphere, (2022).

Operationalizing Trusted AI, AIPalooza, (2021).

AWARDS

Leidos CTO Office Purple Dollar Award, Leidos CTO Office Award (2024): received when an internal research program makes its first capture / customer-paid transition.

Leidos CTO Office Applied R&D Award, Leidos CTO Office Award (2023): received for the best department-wide applied research for the prior year.

Leadership, Excellence in Integrity: Rising Star, Leidos Annual Achievement Award (2021): awarded by Leidos’s executive leadership annually to a handful of individuals that have demonstrated potential for leadership.

Object Detection at the Edge Winner, Leidos AIPalooza (2020).

DeepRacer Reinforcement Learning Finalist, Leidos AIPalooza (2021).

AWS DeepRacer Top 10% Model “Driver’s License” and Final Invitee (2022).

Judges Choice and People’s Choice Winner, Leidos Subsidiary Varec Hackathon (2021).

SKILLS

Programming Languages – Python, R, C++, Java

Professional Certifications – AWS Machine Learning, AWS Cloud, Neo4j, Security+, Tensorflow for Artificial Intelligence

Software Pytorch, Keras, Tensorflow, scikit-learn, Ray, Git, Neo4j, Numpy, Pandas, Matplotlib, OpenCV, Docker, Flask, Linux CLI, Jupyter, Anaconda, VSCode

LANGUAGES

English (Native), **French** (Verbal, Written Proficient).

INTERESTS

D1 Womxn's Rugby 7s, Player, *Washington D.C. Furies* (2014-2023), D.C.

Rock Climbing, Amateur climber, *Movement Gym* (2021-current), Princeton, N.J.

Diversity & Inclusion Council, Board Member (2020-2022), *Leidos*, Arlington.

DMV Pride, Co-Chair (2020-2022), *Leidos*, Arlington.