Matthew Landers

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Research Interests

Deep reinforcement learning, offline reinforcement learning, real-world reinforcement learning

Education

University of Virginia, Charlottesville, VA 2021-PRESENT

Ph.D., computer science
Advisors: Dr. Thomas Hartvigsen and Dr. Afsaneh Doryab
GPA: 4.0

Johns Hopkins University, Baltimore, MD 2019-2021

M.S., computer science
Advisor: Dr. Suchi Saria
GPA: 4.0

Indiana University, Kelley School of Business, Bloomington, IN 2008-2012

B.S., entrepreneurship and corporate innovation

Publications

[1] **Matthew Landers**, Taylor Killian, Tom Hartvigsen, Afsaneh Doryab. "Improving and Accelerating Offline RL in Large Discrete Action Spaces with Structured Policy Initialization" *Under review.*

[2] **Matthew Landers**, Taylor Killian, Tom Hartvigsen, Afsaneh Doryab. "SAINT: Attention-Based Modeling of Sub-Action Dependencies in Multi-Action Policies" *Under review.*

[3] **Matthew Landers**, Taylor Killian, Hugo Barnes, Tom Hartvigsen, Afsaneh Doryab. "BraVE: Offline Reinforcement Learning for Discrete Combinatorial Action Spaces" NeurIPS, 2025.

[4] **Matthew Landers**, Afsaneh Doryab. "Parameter Transfer for Single-Task Reinforcement Learning." International Joint Conference on Neural Networks, 2025.

[5] **Matthew Landers**, Afsaneh Doryab. "Deep Reinforcement Learning Verification: A Survey." ACM Computing Surveys, 2023.

[6] Echo Wang*, **Matthew Landers***, Roy Adams*, Adarsh Subbaswamy, Hadi Kharrazi, Darrell Gaskin, Suchi Saria. "A bias evaluation checklist for predictive models and its pilot application for 30-day hospital readmission models." Journal of the American Medical Informatics Association, 2022.

[7] **Matthew Landers**, Ray Dorsey, Suchi Saria. "Digital Endpoints: Definition, Benefits, and Current Barriers in Accelerating Development and Adoption." Digital Biomarkers, 2021.

[8] **Matthew Landers**, Suchi Saria, Alberto Espay. "Artificial Intelligence Replace the Movement Disorders Specialist for Diagnosing and Managing Parkinson's Disease?" Journal of Parkinson's Disease, 2021.

[9] Chen Qian, Patraporn Leelaprachakul, **Matthew Landers**, Carissa Low, Anind K . Dey, Afsaneh Doryab. "Prediction of Hospital Readmission from Longitudinal Mobile Data Streams." Sensors, 2021.

* indicates equal contribution

Industry Experience

Senior Software Engineer, **Stride Consulting** 2017-2019

Client: Schonfeld Strategic Advisors

- Built stateless Python services and stateful Java services to efficiently process billions of dollars in trades
- Improved system latency from 1.1 seconds to 15 milliseconds and reduced system recovery time from 2 hours to less than 5 minutes by changing data transfer method from HTTP to Kafka

Client: Peloton Interactive

- Led development of payment processing and order fulfillment tools for Australian launch
- Designed and implemented an approach to facilitate communication with new Enterprise Resource Planner

Client: Magnetic

- Rebuilt core platform growing monthly recurring revenue from $1,000,000 to $6,000,000
- Engineered Python microservices that allowed users to manage each component of an online advertisement including audience definition, budget selection, and media creation
- Built microservices that published advertisements to 7 different networks

Software Engineer, **Human API** 2016-2017

- Worked with data science and product teams to build integration solutions for 40+ customers
- Engineered custom products for 30+ clients including a user health timeline for Samsung
- Devised a partnership plan with executives from Merck Germany

Co-founder & CEO, **Stonecrysus** 2013-2016

- Developed a machine learning health platform that earned 4 United States patents
- Worked with an electrical engineering and design firm to manufacture a proprietary fitness wearable
- Presented 3 times to groups of 300+ people, including at CES
- Negotiated with organizations such as Samsung, Amazon, and the US Olympic Committee
- Designed and built a web platform that allowed health practitioners to access and analyze patient data

Co-founder & President, **Synduit** 2012-2013

- Grew monthly recurring revenue from $0 to $100,000+ in less than 1 year with a team of 2 people
- Drove profit margin to 80% by managing construction of a machine learning-based automation platform
- Managed 12 employee team while building client base to 120+ businesses

Intern, **Tradeweb Markets** 2010, 2011

Awards

University of Virginia Endowed Graduate Fellowship 2024

Teaching

University of Virginia

Teaching Assistant, AI for Social Good 2021

Teaching Assistant, Artificial Intelligence 2023, 2024

Johns Hopkins University

Course Assistant, Data Structures 2019, 2020

Mentorship

University of Virginia Graduate School Mentor Program 2022

UVA Computer Science Graduate Student Group Mentorship Program 2021

Engineering Manager, Stride Consulting 2018-2019

Stride Consulting Mentorship Program 2017-2019

Service

Student Volunteer

UbiComp 2021, 2022

Reviewer

Conference on Neural Information Processing Systems	2024
ACM Computing Surveys	2024
ACM SIGKDD international conference on knowledge discovery & data mining	2024
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies	2022,2023
CHI Conference on Human Factors in Computing Systems	2023

Patents

us 9,317,815: Health and fitness management system	Issued 2016
us 9,183,498: Health and fitness management system	Issued 2015
us 8,892,481: Health and fitness management system	Issued 2014
us 8,600,928: Health and fitness management system	Issued 2013