

Parsa Idehpour

Education

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University of Pennsylvania, School of Engineering and Applied Sciences

Philadelphia, PA

Candidate for M.S.E. in Robotics

Expected May 2026

Candidate for B.S.E. in Math and Computer Science (GPA: 3.99 — Major GPA: 4.00)

Expected May 2026

Minors: Statistics, Engineering Entrepreneurship

Relevant Coursework: Principles of Deep Learning, Machine Learning Research Practicum, Machine Learning, Algorithms and Data Structures, Discrete Mathematics, Automata, Computation & Complexity, Optimization, Advanced Linear Algebra, Advanced Analysis, iOS programming, Stochastic Processes, Probability, Learning in Robotics

Professional Experience

Machine Learning Researcher

Philadelphia, PA

Electrical and Systems Engineering Department, University of Pennsylvania

April 2024 - Present

- Investigate the sloppiness of deep learning models using mathematical frameworks and bayesian analysis.
- Design neural networks and analyze how training data structures affect sloppiness in neural architectures.
- Reduced the number of parameters and training time of deep neural networks network by 83%.

Data Analyst

Philadelphia, PA

Wharton Analytics Fellows, Wharton School of Business

February 2024 - Present

- Analyzed absenteeism patterns for DART and implemented measures that reduced absenteeism by 12%.
- Developed Python-based machine learning models, achieving 95% accuracy in predicting absenteeism trends.
- Conducted time series analysis to forecast trends, enabling proactive workforce management.

Mathematical Economics Researcher

Philadelphia, PA

Department of Biology, University of Pennsylvania

October 2023 - Jul 2024

- Developed novel mathematical and probabilistic models to study social adaptation and cooperation.
- Innovated a framework based on game theory to study replicated dynamics of switches between options.

Research Intern

Paris, France

Learning Planet Institute, University of Paris

September 2022 - December 2023

- Trained deep learning models using SMILES chemical language model to generate AntiMicrobial peptides(AMPs)
- Leveraged PyTorch, and TensorFlow for NLP model development, improved AMP generation accuracy by 10%.

Committee Member, Exam Designer, and Lecturer

Tehran, Iran

Young Scholars Club

July 2022 - June 2024

- Led and organized classes on bioinformatics, and neuroscience for Biology Olympiad Summer Camp.
- Designed exams and mentored students, 50% of whom achieved gold medals in the international olympiad.

Teaching Assistant

Philadelphia, PA

PACT (Program in Algorithmic and Combinatorial Thinking)

June 2024 - July 2024

- Guided students through complex topics in algorithms, discrete mathematics, and data structures.
- Graded assignments and exams, providing detailed and constructive feedback, improving student comprehension.
- Conducted review sessions and provided one-on-one assistance to enhance student understanding.

Projects

Radiopath Project

May 2024 - Present

- Developing a multimodal language model integrating pathology, radiology, and text for medical diagnosis.
- Collaborating with a team in Mayo Clinic and Vector Institute to enhance diagnostic accuracy through model optimization using Python and NLP and computer vision frameworks.

Citadel Summer Invitational Datathon

June 2024

- Selected for a highly competitive Datathon (1% acceptance rate) focused on food and lifestyle issues.
- Conducted multivariate regression, random forest, and time series analysis to assess the impact of economic cycles on food deserts and public health outcomes, increasing the R-squared value to 0.88.
- Applied clustering and statistical analysis on stock prices and CPI, revealing significant economic dynamics between fast food establishments and supermarket closures in food desert regions.

Skills

Languages and Libraries: Java, Python, C, C++, Swift, R, MATLAB, SQL, HTML/CSS, JavaScript, PyTorch

Tools and Frameworks: Git, Docker, AWS, Kubernetes, Google Cloud Platform, MongoDB, LaTeX

Concepts: Probabilistic Programming, Machine Learning, Deep Learning, Computer Vision, Natural Language Processing (NLP), REST API & API Development, Object-Oriented Programming (OOP)

Honors and Awards

Penn Engineering Entrepreneurship Fellow - (1 of 12 students selected)

2024

National Biology Olympiad - Gold Medalist (1 out of 20000)

2022

Citadel Summer Invitational Terminal Semi-finalist (top 8 out of 1000)

2024

National Math Olympiad - Silver Medalist (Top 1 %)

2020