

Arman Zarei

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EDUCATION

- **University of Maryland, College Park** Maryland, USA
Ph.D. in Computer Science - Advised by Prof. S. Feizi Aug. 2023 - Present
- **Sharif University of Technology** Tehran, Iran
B.Sc. in Computer Engineering Sep. 2018 - Feb. 2023
GPA: **19.29/20** (3.98/4.00) - ranked among the top ten
GPA of last four semesters: 19.87/20 (4.00/4.00)
- **Shahid Soltani High School (NODET)** Karaj, Iran
Diploma in Mathematics and Physics Sep. 2014 - June 2018

RESEARCH INTERESTS

Generative Models, Computer Vision, 3D Vision, Adversarial Robustness, Deep Learning

PUBLICATIONS

- **Your Out-of-Distribution Detection Method is not Robust!**
M Azizmalayeri, A Soltani Moakar, A Zarei, R Zohrabi, MT Manzuri, MH Rohban NeurIPS 2022
- **PhytoOracle: Scalable, modular phenomics data processing pipelines**
EM Gonzalez, ... , A Zarei, ... , TL Swetnam, N Merchant, E Lyons, Duke Pauli Front. Plant Sci.
- **Improving Adversarial Training Through the Lens of Out-of-Distribution Detection**
M Azizmalayeri, A Zarei*, A Isavand, MH Rohban* CSICC 2023
- **Enhancing Epileptic Seizure Detection with EEG Feature Embeddings**
A Zarei, B Zhu, M Shoaran IEEE BioCAS 2023 (Oral)

RESEARCH EXPERIENCE

- **École Polytechnique Fédérale de Lausanne (EPFL)** Lausanne, Switzerland
Research Assistant (Summer Internship) - Machine Learning and Signal Processing July 2022 - June 2023
Supervisor: Prof. M Shoaran
 - Seizure detection using EEG recordings of brain activity and domain adaptation
- **Sharif University of Technology** Tehran, Iran
Research Assistant - Robustness in Deep Learning Apr. 2021 - Jan. 2023
Supervisor: Prof. MH Rohban
 - Robust out-of-distribution detection
 - Improving adversarial training using data-centric approaches
- **University of Arizona** Arizona, United States
Research Assistant (Summer Internship) - 3D Vision July 2021 - Sep. 2021
Supervisors: Prof. TL Swetnam, Prof. E Lyons
 - Lettuce soil point cloud segmentation

SELECTED ACADEMIC PROJECTS

- **Improve Seizure Detection using Adaptive Learning:** [source-code](#)
Designed and implemented pipelines for adaptive learning with tunable parameters concerning seizure detection using EEG signals (neural activities of brain) - Compared and analyzed the results of various models and methods - Developed tools to facilitate and accelerate the seizure detection procedure at different stages
- **3D Lettuce Soil Point Cloud Segmentation:** source-codes: [1](#) - [2](#) - [3](#)
Designed and implemented containerized (dockerized) pipelines for both annotating point clouds and training models in order to remove soil from soil/lettuce point cloud (point cloud segmentation) - Developed tools to facilitate the aforementioned procedure at various stages
- **Selected Course Projects:**
Image Processing: [link](#) | Machine Learning: [link](#) | Modern Information Retrieval: [link](#) | Compiler Design: [link](#)
- **Others:** [Github](#)

WORK EXPERIENCE

- **Sotoon**
Software Engineer Jan. 2022 - Apr. 2022
 - A company providing Cloud and AI services
 - Project: Designed a Human Resource Management System
 - Technologies: Python, Django, Docker, HTML/CSS, Javascript, jQuery, Bootstrap
- **Snappfood**
Software Engineer Aug. 2020 - Feb. 2021
 - Leading online food ordering company in Iran
 - Back-End Developer in Menu Squad - Maintained menu APIs and designed new features
 - Technologies: PHP, Symfony, MySQL, Redis, Elasticsearch, Docker, RabbitMQ, HTML/CSS/Bootstrap, JS/jQuery
- **Snappfood**
Software Engineer Intern Jan. 2020 - Feb. 2020
 - Technologies: PHP, Symfony, MySQL

TEACHING ASSISTANT EXPERIENCE

- **Algorithms** Fall 2023
- **Machine Learning | Artificial Intelligence | Probability and Statistics** Fall 2022
- **Artificial Intelligence | Technical Presentation** Spring 2022
- **Artificial Intelligence | Design of Algorithms** Fall 2021
- **Design of Algorithms** Spring 2021
- **Compiler Design | Data Structures and Algorithms** Fall 2020
- **Advanced Programming** Spring 2020

RELEVANT COURSEWORK

- **Machine Learning:** 20/20
- **Artificial Intelligence:** 20/20
- **Linear Algebra:** 20/20
- **Advanced Information Retrieval:** 19.9/20
- **Advanced Computer Graphics:** (in progress)
- **Stanford CS229 - Machine Learning** (online, audited)
- **Stanford CS231n - Deep Learning for Computer Vision** (online, audited)
- **Generative Adversarial Networks (GANs) Specialization** (Coursera)
- **Calculus 2 (Vector Calculus):** 19.9/20
- **Design of Algorithms:** 20/20
- **Image Processing:** 19.4/20
- **Web Programming:** 20/20
- **Visual Learning and Recognition:** (in progress)

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C/C++, PHP, JavaScript, Golang
- **Machine Learning Frameworks:** PyTorch, NumPy, OpenCV, Scikit-Learn, Pandas, ...
- **Web Development & Database:** Laravel, Symfony, Django, NodeJS, ExpressJS, Wordpress, React, HTML/CSS, jQuery, Bootstrap, MySQL, Redis, MongoDB, Elasticsearch, RabbitMQ, ...
- **Hardware Design:** Quartus, Arduino, Proteus, ModelSim, Verilog, MIPS Assembly
- **Miscellaneous:** Docker, Git, Linux,

ACADEMIC SERVICES

- **Backend Lead, Sharif AI Challenge**, Iran's Largest AI Competition 2021
 - Managed the entire software development lifecycle, including architecture, solution design, and maintenance.

HONORS AND AWARDS

- Ranked 1st in the PHP & Laravel Contest by CodeCup
- Ranked 1st in the Front & Back Development Contest by SnappTrip
- Ranked 1st in the PHP & Laravel Contest by Edalat-Khaneh
- Ranked 2nd in the Provincial Chess Tournament
- Ranked 3rd in the PHP & Laravel Contest by Quera
- Ranked 3rd in the OOP Contest by Career Days
- Ranked among the top 1% in the Nation-Wide University Entrance Exam

LANGUAGES

- **Persian:** native
- **English:** proficient (TOEFL 113: W30, S29, R27, L27)