

# Armin Hadzic

✉ firstlast at outlook.com 🌐 arminhadzic.com in LI 📄 Publications

## Education

### University of Kentucky

Master of Science in Computer Science, GPA – 4.0, Outstanding MS Student Award

2018-2020

Advisor: Nathan Jacobs

### University of Kentucky

Bachelor of Science in Computer Engineering, GPA – 3.8

2016

Magna Cum Laude

### University of Kentucky

Bachelor of Science in Electrical Engineering, GPA – 3.8

2009-2013

Magna Cum Laude

## Professional Experience

### AI Research Scientist

DZYNE TECHNOLOGIES INC.

2021-Present

Fairfax, VA

- Designed and trained a feature extractor and hierarchical weighted sampler for a multimodal fusion model on a **5TB AWS dataset** across 5 organizations—boosting the **F1 score from 52% to 75%** and **securing \$500k** in funding for a \$2.3M program.
- Developed scalable tools for processing and constructing **100k+ sample image datasets**, resulting in a **\$1M contract extension** after achieving **78% F1 score** in segmentation.
- Led/co-wrote 9 proposals, securing **\$3M in funding** to support AI R&D for a team of 11 researchers and engineers.
- Achieved 88% accuracy** in land cover semantic segmentation by developing a GAN-based super-resolution label synthesis method, with strong applicability to street-level imagery problems.
- Engineered a multimodal transformer (PyTorch, HuggingFace) with contextual representations, surpassing the prior state-of-the-art method by reducing traffic modeling error to **7%** on a **12k sample dataset**.

### AI Research Scientist

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LAB

2020-2021

Laurel, MD

- Modeled greenhouse gas emissions for the Climate TRACE initiative, trained with Slurm and deployed with Docker & Dask on the Microsoft Planetary Computer, achieving a **39kg/100m<sup>2</sup> error rate** across the USA and running at global scale.
- Optimized multi-agent swarm controllers via BoTorch, reducing cooperative capture time by **25s** for multiple rewards.
- Developed adversarial de-biasing techniques that **enhanced AI fairness by 20%** in medical imaging and data applications, enabling broader applicability across large populations.
- Developed a state-scale satellite image approach, collapsing the displaced community population estimation error down to **7%**.

### Research Assistant

UNIVERSITY OF KENTUCKY COMPUTER VISION LAB

2017-2020

Lexington, KY

- Developed a multimodal (point cloud/imagery) road **dataset (1M+ segments)** using distributed computing (Slurm). This improved free-flow speed estimation by **13%**—outperforming the prior state-of-the-art with a novel multimodal fusion architecture.
- Designed a PyTorch NLP model to analyze SEC reports, attaining **41% tercile accuracy** in predicting financial returns. Leveraged NLTK and SpaCy for efficient text processing and tokenization.

### Software Development Engineer

BELCAN ENGINEERING GROUP INC.

2015-2018

Lexington, KY

- Automated jet engine diagnostics in C/C++, **saving \$100,000** by developing a diagnostic and fault resolution system.
- Streamlined a legacy C++/Make cross-platform building system, reducing development and compilation time by **60%**.

### INTERNSHIPS

2012-2014

- Designed a routing algorithm for over 20 Automated Guided Vehicles, reducing scrap and transportation costs by **\$57k/year**.

## Technical Skills

Languages	Python, C/C++, Java, Verilog, L <sup>A</sup> T <sub>E</sub> X, Shell
AI/ML	PyTorch, Keras, Tensorflow, <b>Multimodal Transformers</b> , LLMs, Reinforcement Learning
Computer Vision	Generative AI, Segmentation, 3D Vision, Localization, Pose, Depth, Remote Sensing
Infrastructure	Data Processing, Distributed Training, Slurm, Docker, Optimization, AWS, Evaluation

## Service & Recognition

- Best Paper ISEC 2022 and CVPRW EARTHVISION 2021; Outstanding Reviewer CVPR 2024.
- Reviewer 2022-2025: CVPR, ECCV, ICCV, ICLR, NeurIPS, WACV, and CVPRW EARTHVISION.