Armin Hadzic

firstlast at outlook.com www.arminhadzic.com LI Publications

Education

University of Kentucky **2018-2020**
Master of Science in Computer Science, GPA – 4.0, Outstanding MS Student Award *Advisor: Nathan Jacobs*

University of Kentucky **2016**
Bachelor of Science in Computer Engineering, GPA – 3.8 *Magna Cum Laude*

University of Kentucky **2009-2013**
Bachelor of Science in Electrical Engineering, GPA – 3.8 *Magna Cum Laude*

Professional Experience

AI Research Scientist **2021-Present**
DZYNE Technologies Inc. *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 **2020-2021**
Johns Hopkins University Applied Physics Lab *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 **$39\text{kg}/100\text{m}^2$ 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 **2017-2020**
University of Kentucky Computer Vision Lab *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 **2015-2018**
Belcan Engineering Group Inc. *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, LaTeX, Shell
AI/ML	**PyTorch**, Keras, Tensorflow, **Multimodal Transformers**, 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 & 2025.
- Reviewer 2022-2025: CVPR, ECCV, ICCV, ICLR, NeurIPS, WACV, and CVPRW EARTHVISION.