Armin Hadzic

firstlast at outlook.com • arminhadzic.com • Profile • Publications

My interests center on developing **multi-modal fusion** methods, **image synthesis**, **3D localization**, and **scalable** AI.

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., *Scott Workman* *Fairfax, VA*

- Achieved 88% accuracy in land cover semantic segmentation by developing a **super-resolution label synthesis** method.
- Engineered a **multi-modal transformer** with contextual representations, reducing the traffic modeling error rate to 7%.
- Developed **scalable** tools for collecting, processing, and labeling training datasets, resulting in a $\$1M$ contract extension.
- Led and/or wrote 9 successful proposals, securing $\$3M$ in funding to support AI research and development initiatives.

AI Research Scientist **2020-2021**
Johns Hopkins University Applied Physics Lab, *Ryan Mukherjee & Gordon Christie* *Laurel, MD*

- Designed optimization methods for tuning multi-agent swarm control systems, yielding $25s$ cooperative multi-reward capture.
- Improved AI fairness by up to 20% in medical image and data applications by developing adversarial de-biasing methods.
- Modeled greenhouse gas emissions for the Climate TRACE initiative, achieving a $39kg/100m^2$ error rate across the USA.
- 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, *Nathan Jacobs* *Lexington, KY*

- Surpassed (13%) the free-flow speed estimation record by designing a **multi-modal fusion** (point cloud/imagery) model.
- Estimated company financial returns with 41% tercile accuracy by developing a NLP model to interpret SEC text reports.
- Enhanced a navigation system's safety by integrating a visual road safety assessment model to circumvent hazardous roads.

Software Development Engineer **2015-2018**
Belcan Engineering Group Inc., *Alan Scott* *Lexington, KY*

- Automated jet engine diagnostics, saving $\$100,000$ by developing and testing a diagnostic and fault resolution system.
- Reduced development and compilation time by 90% through modernizing and streamlining a legacy cross-platform build system.

Software Engineering Co-op **2013-2014**
Tempur Sealy International Inc., *Sam Pollock* *Lexington, KY*

- Scaled-up product testing 10 fold by developing and launching a 3D heatmap data collection, logging, and visualization application.

Software Engineering Intern **2012**
Johnson Controls Inc., *Daniel Legg* *Florence, KY*

- Reduced scrap and transportation costs, $\$57,000$/year, by designing a bespoke Automated Guided Vehicle routing algorithm.

Technical Skills

Languages & Frameworks	**Python**, C/C++, Java, Verilog, LaTeX, Shell, **PyTorch**, Scikit-Learn, Keras
Artificial Intelligence	**Multimodal Fusion**, **Transformers**, LLMs, Reinforcement Learning, SSL
Computer Vision	Generative AI, Segmentation, 3D, Localization, Pose, Depth, Remote Sensing
Infrastructure	Data Processing, Distributed Training, Slurm, Docker, Optimization, Evaluation

Service & Recognition

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