

# Armin Hadzic

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in armin-hadzic

## Research Interests

Developing **deep learning** methods to address challenges in latent information representation from varying sources, such as point clouds, images, and audio. More generally, I am interested in **deep learning, computer vision, reinforcement learning, artificial intelligence, remote sensing, and robotics**.

## Education

### University of Kentucky

*Master of Science in Computer Science, GPA – 4.0*  
Advised by Associate Professor Nathan Jacobs

**Estimated Graduate Date: Spring 2020**  
2018-Present

### University of Kentucky

*Bachelor of Science in Computer Engineering, GPA – 3.8*  
Graduated Magna Cum Laude

2016

### University of Kentucky

*Bachelor of Science in Electrical Engineering, GPA – 3.8*  
Graduated Magna Cum Laude, Minor in Computer Science  
Dean's List Fall 2010 to Spring 2013.

2009-2013

## Publication

- [1] Weilian Song, Scott Workman, Armin Hadzic, Xu Zhang, Eric Green, Mei Chen, Reginald Souleyrette, and Nathan Jacobs. "FARSA: Fully Automated Roadway Safety Assessment". In: *2018 IEEE Winter Conference on Applications of Computer Vision (WACV)* (March 2018).

## Professional Experience

### Research.....

#### Research Assistant

UK COMPUTER VISION LAB

**2018-Present**  
Lexington, KY

- Advised by Associate Professor Nathan Jacobs.
- Designing convolutional neural networks to leverage pointclouds and satellite imagery to regress car freeflow speeds in Kentucky.
- Developed Natural Language Processing (NLP) temporal convolutional and attention-based neural network models to estimate firm economic performance using public SEC text reports.

#### Machine Perception Intern

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORTORY

**2019**  
Laurel, MD

- Advised by Ryan Mukherjee and Dr. Gordon Christie.
- Regressed population of displaced communities for disaster relief efforts, utilizing overhead imagery and deep neural networks.

#### Volunteer Machine Learning Research Assistant

UK COMPUTER VISION LAB

**2017-2018**  
Lexington, KY

- Automated the US Road Assessment Program (usRAP) road safety assessment using a deep convolutional neural network to directly estimate roadway safety based on street-level panorama images, reducing evaluation time to milliseconds per image.
- Integrated the roadway safety estimator into a GPS vehicle routing system to enhance navigation with the capability to identify a balanced, safe and fast, driving route.

### Industry.....

#### Software Development Engineer

BELCAN ENGINEERING GROUP INC.

**2017-2018**  
Lexington, KY

- Developed, maintained, and tested a jet engine diagnostic and fault resolution system, saving over \$100,000 by automating engine maintenance diagnostics.
- Integrated and streamlined a legacy cross-platform build system with modern development tools, mitigating build errors and reducing development time.

**Embedded Software Engineer****2016-2017**

BELCAN ENGINEERING GROUP INC.

*Lexington, KY*

- Streamlined the user interface and reduced diagnostic time of jet engines by identifying, isolating, and purging Onboard Maintenance System inefficiencies and defects.

**Software Test Engineer****2015-2016**

BELCAN ENGINEERING GROUP INC.

*Lexington, KY*

- Designed and implemented Control and Diagnostic System Verification and Validation Tests for 4 P&W Turbofan Jet Engines.
- Discovered mission critical control logic, software, and documentation defects through root-cause analysis, informal testing, regression testing and system testing; leading to best in class, safe, and high performance jet engines.

**Founder and Software Developer****2015**

CHANGING TABLE APP

*Lexington, KY*

- Developed an Android application to aid users in locating men's washrooms containing changing tables in order to alleviate the stress of searching for baby friendly environments.

**Software Engineering Co-op****2013-2014**

TEMPUR SEALY INTERNATIONAL INC

*Lexington, KY*

- Pioneered and developed a GUI and 3D topography mapping application to visually analyze large datapoint datasets, generating streamlined product testing, seamless user experience, and refined product quality.

**Software Engineering Intern****2012**

JOHNSON CONTROLS INC

*Florence, KY*

- Designed and implemented a software algorithm for streamlined Automated Guided Vehicle (AGV) routing, saving \$57,000 per year in scrap reduction and transportation costs.

**Technical skills**

Programming Languages	C/C++, Python, Verilog, Java, MIPS/IA32 Assembly, Make, $\LaTeX$
APIs/Libraries	PyTorch, Scikit-Learn, Numpy, Pandas, Keras, Tensorflow, OSMNX
Operating Systems	Unix/Linux, Windows, OSX, Android
Development Environments	Linux Toolchain, Jupyter, PyCharm, Visual Studio, Android Studio, Xilinx