Armin Hadzic

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Research Interests

Developing **Deep Learning** methods for simultaneous **mapping** and **localization** with integrated **semantics**. Addressing challenges in visual ambiguity and occlusion from a single vantage point source for **Computer Vision** systems using a continuous image stream. More generally, I am interested in **deep learning, machine learning, artificial intelligence,** and **robotics**.

Education

University of Kentucky
Bachelor of Science in Electrical Engineering, GPA – 3.75   *2009–2013*
Graduated Magna Cum Laude, Minor in Computer Science

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

Dean's List Fall 2010 to Spring 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

Academia

Volunteer Machine Learning Research Assistant   **2017-present**
UK Computer Vision Lab   *Lexington, KY*
- Summary: Automating 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   **2017–Present**
Belcan Engineering Group Inc.   *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*

o Pioneered and developed a GUI and 3D topography mapping application to visually analyze 5,000 datapoint datasets, generating streamlined product testing, seamless user experience, and refined product quality.

Software Engineering Intern 2012

Johnson Controls Inc *Florence, KY*

o 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	Keras, Tensorflow, Scikit-Learn, Numpy
Operating Systems	Unix/Linux, Windows, Android
Development Environments	Linux Toolchain, Visual Studio, Jupyter, Android Studio, Xilinx