

DAVID JONES

(859) 940 - 9400 • d.t.jones@outlook.com • davidthomasjones.me

RESEARCH INTERESTS:

I am interested in developing novel algorithms for representation understanding to solve challenging problems, particularly in the areas of **big data**, **remote sensing**, **autonomous agents**, and **robotics**.

PUBLICATIONS

- David Jones, Nathan Jacobs. "Airborne Lidar Intensity Harmonization". In: IEEE International Geoscience and Remote Sensing Symposium (IGARSS). Brussels, Belgium, June 2021
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EDUCATION

University of Kentucky, Lexington, KY

- M. S. in Computer Science - In Progress - Current GPA: 3.91, Expected: Spring 2021
 - B. S. in Computer Science and Computer Engineering and a minor in Math, December 2015
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PROFESSIONAL EXPERIENCE

University of Kentucky, Lexington KY

2019-Present

Role: Funded Graduate Student, Teaching and Research Assistant | Lab: Multi-Modal Vision Research Lab

- Explored methods for leveraging point clouds to estimate color transfer for intensity image harmonization among large-scale point clouds. This exploratory work established a novel algorithm using state-of-the-art point cloud processing techniques and a pipeline architecture for harmonizing entire point cloud collections. Successfully published work as the lead author.
- Collaborated as a research assistant on a long term contract. Utilized techniques in image processing and computer vision in image segmentation tasks. The method successfully surpassed the client's baseline and was then integrated into a larger software suite.
- Served as a teaching assistant for the senior level machine learning class. Consulted with the professor on learning activities, assignments, and assessments. Designed, updated, distributed, and evaluated homework assignments for various topics. Held regular office hours and assisted in student learning.
- Advised by Dr. Nathan Jacobs

Belcan Engineering Group Inc, Lexington KY

2016-2019

Role: Software Engineer | Departments: Controls & Diagnostic Systems, Field Maintenance Test

- Implemented Control and Diagnostic System Verification and Validation Testing for various P&W Turbofan Jet Engine variants.
- Collaborated with a team responsible for automating the verification and validation process of over 700 tests, reducing the formal testing process by 3 months, breaking company records.
- Developer on a software team to develop efficient automation tools for military engine health reporting metrics, leveraging current technologies in a fast paced, agile environment.
- Developed and maintained robust sets of test cases as well as test procedures for Safran's newest auxiliary power unit. Implemented these procedures in code and tested them on engine simulation software to verify correct behavior.
- Led a small team of software engineers responsible for updating, maintaining, and re-engineering engine logic while streamlining the engine's user interface panel. Followed the guidelines set in

DO-178B for avionics software. Utilized Onboard Maintenance and Test tools along with a real time FADEC simulation tool to debug and test changes.

- Discovered mission critical control logic, software, and documentation defects through root-cause analysis and test script implementation, leading to best in class, safe, and high performance jet engines.
- Coordinated the development of cost savings software by a small team of software engineers used for gathering metrics about office performance saving upwards of 7000 dollars a year.

Lexmark International, Lexington, KY

2015-2016

Role: Software Engineering Intern | Departments: Process and Product Quality Assurance

- Designed, developed, and documented applications with an agile development team that operated in two week scrum cycles.
- Implemented a standalone tool to rapidly test printers which acquired, parsed, searched, edited, and then transmitted cumbersome configuration files, saving \$70,000 annually by automating a previously labor-heavy task.
- Automated the acquisition, organization, and publication of the model shop's part delivery schedule through a server-side utility which quietly ran in the background and automatically updated. This approach mitigated the lack of accessibility caused by a limited license pool with the previous application, but also improved readability and streamlined employee productivity.

TECHNICAL SKILLS

Programming Languages	Python, C/C++, C# .NET, Verilog, Bash, VHDL, Javascript, MIPS/IA32, MATLAB, VBA, XML, Flex/Lex, Bison/YACC, HTML/CSS, Javascript, Arduino, Processing, SQL, R, Assembly
Development Environments	Visual Studio, Xilinx, Eclipse, UNIX, Understand
Operating Systems	Arch, Ubuntu, Debian, Windows, OSX, Android
Applications/Libraries	PyTorch, Tensorflow, Keras, Pandas, Numpy, Scikit-Learn, SciPy, SLURM, Singularity, ModelSim, Git, InstallShield, Cadam, Angular, Express, Node, MongoDB, MariaDB, MySQL, Firebird, I2C, DOORS, SVN
Other Skills:	Team Building, Leadership, Presentation, Project Management, Communication, Documentation, Analysis, Cross Group Collaboration, Development Lifecycle, Scrum, Agile Development Practices.