Jeremy Desforges

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Experience

Autonomous Software Engineer **L3Harris** **05/2020 - Present**

- Design, estimate, build, deploy, and support leading autonomy solutions for Unmanned Surface Vessels
- Introducing collaborative autonomy support into our software suite
- Created a product to introduce autonomous navigation recommendations on Manned Surface Vessels
- Led a team of 7 engineers to add aerial payload support on unmanned vessels by adhering to additional kinematic constraints during motion planning
- Lead a team of up to 5 software engineers over the past 3 years for solving motion planning problems
- Provide onsite support for deployment and testing of new vessels, including 7 day deployments at sea
- Contribute significant development of software for 6 Medium / Large Unmanned Vessels for the Navy
- Apply cutting edge research in autonomy and perception for Unmanned Surface Vessels
    - COLREGs compliant nonholonomic motion planning, collision avoidance, and route planning
    - Object detection and classification using Convolutional Neural Networks
    - Sensor fusion and localization using Kalman filters and Gaussian processes
- Write hundreds of unit tests and over 200 regression tests to validate new features and maintain consistent behavior
- Participate in an agile workflow, code reviews, and design meetings

Data Scientist **Frank's International** **05/2019 - 05/2020**

Software Engineer Intern **06/2017 - 05/2019**

- Researched and utilized Dense and Convolution Neural Networks, Linear Regression models, and Decision Trees and Forests for monitoring and automating dangerous oilfield procedures
- Trained 4 Machine Learning models to over 90% accuracy on tens of thousands of well connections
- Created programs for cleaning, pre-processing, analyzing, and visualizing millions of data points
- Developed programs in Python and LabVIEW to control a suite of hydraulic and pneumatic tools

Education

M.S. Computer Science **Georgia Institute of Technology**

Specialization in Computational Perception and Robotics

Relevant Coursework:

Artificial Intelligence	Computer Vision	Reinforcement Learning
Graduate Algorithms	Computational Photography	Intro to Analytics Modeling
Robotics: AI Techniques	Machine Learning for Trading	Game AI

B.S. Electrical Engineering **University of Louisiana at Lafayette**

Minor in Mathematics

Honors & Awards: *cum laude*, Daniel G. Egan Scholarship, TOPS Honors Scholarship

Extracurriculars: National Honor Society, Louisiana Engineering Society

Publications: "Relative Angle Correction for Distance Estimation Using K-Nearest Neighbors," in IEEE Sensors Journal, vol. 20, no. 14.

Projects

Navigation Assistance Using Neural Networks

- Developed an Android app as a senior design project to improve navigation and safety for the visually impaired at the University of Louisiana at Lafayette
- Utilized TensorFlow and OpenCV to create a U-Net architecture for semantic segmentation and a typical convolutional neural network for classification

Languages, Tools, & Frameworks

C++	Python	LabVIEW
TensorFlow	OpenCV	Pandas
NumPy	Linux	GDB

Skills

Artificial Intelligence
Machine Learning
Computer Vision
Reinforcement Learning