

Tony Shu

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Education

Georgia Institute of Technology

Atlanta, Georgia

B.S IN MATERIALS SCIENCE & MINOR IN COMPUTER SCIENCE

Aug. 2012 - December 2016

- 3.84/4.00
- Concentrations in Structural & Functional Materials, Artificial Intelligence

Experience

AMBER Lab - Dr. Aaron Ames

Atlanta, Georgia

AMPRO3 PROJECT MANAGER

Aug. 2015 - Now

- Manage a graduate team to implement novel nonlinear control algorithms on AMPRO3, a custom powered transfemoral prosthesis
- Design C++/ROS packages for transducer integration and trajectory generation

Intelligent Control Lab at Peking University - Dr. Qining Wang

Beijing, China

RESEARCH ASSISTANT

May 2015 - Jul. 2015

- Implemented USART communication and DMA memory management protocols in C for angular velocity sensors used in transtibial prostheses, increasing control loop resolution by 17%

SpaceX

Hawthorne, California

PROPULSION INTERN

May 2014 - Aug. 2014

- Optimized direct metal laser sintering algorithms for use with Inconel and Titanium superalloy powders in combustion component production, resulting in decreased porosity and expanded geometric capabilities
- Developed a complete metal powder characterization lab for use in DMLS initiatives and alloy microstructure analysis, saving \$150,000 per year in operation costs

Projects

FindED.io

Atlanta, Georgia

CO-FOUNDER

Jan. 2016

- Built a webapp which finds the optimal emergency room for non-ambulance emergencies from a database of 4,931 hospitals
- Returns search results based on real time travel data from Google Maps API, hospital quality metrics, and published wait time statistics

ReCap: Zirconia Recycling Initiative

Atlanta, Georgia

TEAM MEMBER

Jan. 2016 - May 2016

- Utilized materials testing methods to characterize swarf powder left over from the milling of zirconia dental crowns, resulting in a low-cost recycling solution for the reuse of 1.15 million pounds of zirconia annually
- Sponsored by 3M Corporation

Bandit: "Take What You Need"

Atlanta, Georgia

PROJECT MANAGER

Aug. 2015 - Dec. 2015

- Developed a modular data collection band which allows for unique loadouts of sensors based on user needs
- Implemented a prototype with hot-swappable sensors in C

Publications & Awards

Under Review **Robust Control of a Powered Transfemoral Prosthesis Device with Experimental Verification,** V. Azimi, T. Shu, H. Zhao, E. Ambrose, A. Ames, D. Simon *American Controls Conference 2017*

1st Place **FindED.io - A Patient Decision Tool for Determining the Optimal Emergency Room for Non-Ambulance Emergencies,** P. Taylor, T. Shu, F. Khan, D. Rivera, E. Lee *IJSE Paper Competition 2016*

1st Place **ReCap: Zirconia Recycling Initiative,** T. Shu, H. Liu, A. Thomas, H. Zhang, N. Kane, J. Wang *GT Capstone Expo 2016*

Jack J. and Leda Zbar Scholarship, Georgia Tech MSE Research Scholarship, Zell Miller Scholarship, TE Stribling Textile Fund, Art Cox Scholarship, Tau Beta Pi

Teaching

Leadership

Atlanta, Georgia

HEAD TA MSE3021 THERMAL PROPERTIES, TA MSE4022 CERAMICS FABRICATION, RESIDENT ADVISOR,

YELLOW JACKET ARCHERY CLUB PRESIDENT

Software

JAVA, C/C++, ROS, PYTHON, MATLAB, SOLIDWORKS, MACHINE LEARNING, KNOWLEDGE-BASED AI