

Drew Collins

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Professional Profile

- Award winning electromechanical and embedded firmware design.
 - Data analysis experience: ECG, EEG, EMG, PPG, viscometry, image processing, membrane transport, microsphere MFG, spectrometry, infrared TOF, chromatography, electrochemical cells, heat transfer, hemocytometers/fluorescence, and polymer/composite/bone mechanics
 - Software: Matlab(5 years), Python(2 years), C++, Linux, Solidworks, Flask, Google Actions, Tcl/Tk, Multisim, Minitab, Arduino IDE, MS Office Suite, HTML/CSS, Tensorflow, SQL, Nginx, Git
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Professional Experience

Freelance Project, Miami, FL Oct. 2018 - Present
Research Coauthor

- Writing review manuscript analyzing GANs with RL in Novel Drug Discovery: ECAAE & ATNC

Freelance Project, Miami, FL Aug. 2017- Present
Senior Design Team Leader, sponsored by Garrison Prosthetics

- Developed a Residual Limb Circumference Instrument for insurance authorization assessment

Documentation and Consultation

- Performed FMEA, PFMEA under necessary ISOs. Drafted OQ and PQ protocols.
- Professionally secured sponsorship offers from clinicals, labs, and hospitals.
- Carried out V&V, patent research, DFM, DFT, GLP, GMP, HACCP and CAPA.

Design

- Developed firmware with Linux/Python and an extensive touchscreen GUI using Tk OOP.
- Designed and soldered A/D circuitry, sensor filters, cable management, robotic controls.
- Simulated and utilized CAD for mechanics,electronics, and optics.

Presentations of Successful Verification Tests

- Presented AEMB TED talk on servers and embedded systems utilizing Linux.
- 1st prize design presentation and poster against 13 strong industry sponsored teams.

Department of Biomedical Engineering, FIU Jan. 2016 - May 2017
Learning Assistant

- Taught: BME Modeling and Simulation, Intro to BME, and Org. Chemistry.
- Numerical integration of ODEs, root-finding methods, logic design, and algorithm optimization.

TEMIM LAB, FIU Feb. 2016 - May 2016
Tissue Engineering Research Assistant

- Tested biocompatibility of graphene scaffolds with bone STEM cells using analysis protocols.
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Education

Bachelor of Science In Biomedical Engineering Dec. 2018
Florida International University, 3.16 GPA

Design Projects

- Won a Google award for a Machine Learning API that simplifies SQL data for Google Assistant.
- Deployed and managed an Nginx server that communicates with physical therapy hardware.
- Designed control system of a neonatal incubator and a 3-D printed EMG activated claw.
- Modeled enzyme kinetics, action potentials, and aortic pulsatile flow with PDEs.