Michael U. Thamm

More info at my website: https://michaelthamm.github.io/

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Education

Ma.Sc. - Electrical & Computer Engineering (Part-Time) [GPA: 93.25] 2019 - Present
~ Thesis: 2D Hybrid Magnetic Field Model Performance Optimization for Linear Induction Motors
CHARGE Labs - University of Windsor, Windsor, ON

Ba.Sc. - Electrical & Computer Engineering [GPA: 79.17] 2015 - 2019
~ Honours Electrical Engineering Co-op, Minor in Mathematics
University of Windsor, Windsor, ON

Analytical Experience

Controls Specialist Jan 2018 - Present
Brave Control Solutions, Windsor, ON
· IIOT asset data collection project for Ford through MQTT broker and Simatic IPC
· IIOT pilot project; custom Tetris game using an S7-1500 PLC with leaderboard server
· Written JavaScript application for conversion between Symax and TIA through XML
· Faro Laser part data analysis for dimensioning and tolerance using BuildIT Metrology

Ma.Sc. Thesis - EV Drive System Optimization Sept 2019 - Present
CHARGE Labs - University of Windsor, Windsor, ON
· Multi-file Python3 code (GitHub Repo)
· Genetic Algorithm (GA) used to optimize a black-boxed multi-objective function
· Hyperparameter optimization for the GA tuning parameters
· Black-boxed function is a custom FEA model utilizing advanced magnetic field analysis
· Motor design and analysis using FEA software ANSYS Electronics
· Design and implement testing equipment for motor performance analysis

Ma.Sc. Course - Global Optimization May - August 2020
University of Windsor, Windsor, ON
· 4-month course on optimization problems with solutions written in MATLAB
· Analysis on solver performance and optimization theory
· Objective functions for metaheuristic and non-linear functions

Career Related Experience

Controls Specialist Jan 2018 - Present
Brave Control Solutions, Windsor, ON
· ABB Robot programming in Rapid to synchronize adaptive welding
· PLC programming for weld cells, presses, and conveyors
· Commissioned mechatronic projects across Mexico, USA, Canada

Controls Design - Coop, University of Windsor May - Aug 2017
Valiant Machine & Tool Inc., Windsor, ON
· Supported senior engineers in turnkey weld cell design and product documentation
· Aided in the PLC programming of weld cells using Rockwell, RSLogix
· Received training in electrical/programming industry standards for level 2 customers

Electrical Assembly   June - Sept 2016
EnerQuest., Harrow, ON
· Assembled high voltage E-Houses for high power transmission (30 kV)
· Extensive use of powered tools while following electrical/mechanical drawings
· Worked with electronic test equipment (oscilloscope, BMS, and multimeter)

Other Experience

Propulsion Team Lead (University of Windsor Team)   Oct 2017 - Present
SpaceX - The Hyperloop Pod Competition, LA, California
· Met Elon Musk and held weekly design reviews with SpaceX engineers
· 3 years of written Python3 programming through issue-tracking and software revision forks
· Led a team of engineering students to rank among the top 21 finalists worldwide
· Aided the controls subsystem to set up Linux OS on a raspberry pie

Profile of Skills

• **Programming Languages:** Python [Adv], JavaScript [Int], C++ [Beg]
    • Setting up a C++ VSCode dev environment ([GitHub Repo](#))
• **Firebase Website Development:** Node & JavaScript & Firestore database
• **PLC Programming Languages:** Siemens [Adv], Rockwell [Int]
• **CAD Software:** ANSYS Electronics [Adv], AutoCAD [Adv], Fusion360 [Beg]

References Available Upon Request