Eugene Ng

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EXPERIENCE

Pratt & Whitney Feb 2017 – Present

Principal Engineer, Manufacturing Engineering & Operations

- Oversaw procurement of hundreds of capital equipment projects totaling more than $100M per year
  - Wrote technical specifications identifying critical processes and guiding design concepts for external vendors
  - Negotiated commercial (pricing, payment structure) and legal terms and conditions to reduce cost and risk
  - Validated and led acceptance tests for all projects, including material handling automation equipment, machining and inspection systems, and CNC and welding equipment, etc.
  - Provided EAR and ITAR classifications for export of sensitive technical data
- Converted capital equipment Access database to SQL Server with AgilePoint front-end
- Established new quote approval operations workflow in Sharepoint and decreased process time by 50%

Presque Labs LLC Jul 2015 – Present

Co-Founder

- HeroX NextGen Cart Design Challenge winner for airport material transport (AMTC) concept to track and transport secured goods within an airport
  - Routed electrical circuit schematic in KiCad and prototyped and fabricated PCB
  - Developed user interface for cart and linked IoT sensors to SQL database using Python
- Generated concepts for Revocube (a 3D puzzle game) and programmed game in Unity with C#
- Built and programmed Context, a text message analytics app, in Android Studio with Java
- Full stack programming with Flask, Django, and MongoDB for Waddle, an events app
- Site reliability engineering for public website and internally hosted web apps, including Jupyter and Nextcloud

Cornell University Aug 2016 – Dec 2016

Graduate Teaching Assistant

- Evaluated and scored class of 30 people in MAE 4580: Introduction to Nuclear Engineering
- Instructional responsibilities included holding office hours and designing lesson plans, class projects, and class discussions

EDUCATION

University of Connecticut May 2019 – Dec 2020

M. Eng, Electrical Engineering

Cornell University

M. Eng, Mechanical Engineering Jan 2016 – Jan 2017

B.S., Mechanical Engineering Aug 2012 – Jan 2016

Minors: English

PROJECTS

Nonlinear Optimal Control of the COVID-19 Pandemic in Connecticut

University of Connecticut

- Created a modified SEIR model of COVID-19 spread in Connecticut, and formulated a discrete, nonlinear, predictive, closed-loop feedback controller to minimize the number of infected
- Simulated mathematical model in Python using the GEKKO optimization suite

Arachnabot: Spider-Inspired Robot

Collective Embodied Intelligence Lab, Cornell University

- Analyzed, modeled, and simulated a to-scale jumping robot with spider-inspired joints in MATLAB, using a differential algebraic equation (DAE) method
- Directed micro-fabrication using FDM and SLA 3D printing methods

Cornell Concrete Canoe

Team Lead, Cornell University

- 3rd place finish at 2016 ASCE Concrete Canoe Competition
- Coordinated and oversaw 6 subteams (aesthetics, analysis, business, mold, mix, and paddling) and 34 persons
- Introduced novel moisture sensors and concrete curing control
- Eliminated shrinkage cracking while increasing tensile and compressive strength by 62% and 35%

Engineers for a Sustainable World: Human Powered Energy Generation

Subteam Lead, Cornell University

- Led HPEG-ROW subteam of 10 people in design, build, and prototype of rowing machine power generator

SKILLS

ANSYS, C#, CSS, Export Administration Regulations (EAR), Docker, HTML, International Traffic In Arms Regulations (ITAR), JavaScript, KiCad, LaTeX, MATLAB, Microsoft Access, Nginx, Python, SolidWorks, Visual Basic for Applications (VBA), Structured Query Language (SQL), Wordpress