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Daniel John Varoli

Education

M.Sc. Biomechanical Engineering *October 2019*
Ecole Polytechnique (Université Paris Saclay), France
Awards: Universite Paris Saclay Masters Program Scholarship

B.A. Physics, B.A. Applied Mathematics *May 2018*
Boston University, Boston MA
Magna Cum Laude (GPA – 3.85)
Awards and Honors: Honors Thesis in Physics, Presidential Scholarship, Dean's List

Professional Skills

Research: Experimental Design and Execution, Applied Physics, Applied Mathematics, Data Analysis and Interpretation, interdisciplinary problem-solving approach, literature review, developing and testing hypotheses, technical presentations, attention to detail, ability to go from idea to physical implementation
Programming: Python, Matlab, Java, Git, Bash, C++, Arduino. PHP, jQuery, SQL, CSS, HTML.
OS/Software: Linux, Fiji, MS Office, Google Colabs, LaTeX
CAD: Autodesk Fusion 360, Autodesk Inventor
Languages: Fluent Speaker of English and Russian. Working knowledge of German and French.

Graduate-level Coursework

Computational Physics, Computational Biology, Modeling of Biomechanical Phenomena, Precision Instrumentation Design, Machine Learning, AI and Systems Biology, Advanced Reinforcement Learning, Advanced Differential Equations, Complex Analysis, Advanced Calculus, Stochastic and Markovian Processes, Statistics and Probability, Mathematical Physics, Qualitative Theory of Differential Equations, Statistical Thermodynamics

Projects

- Participating in the AWS JPL Mars Rover challenge. Developing a Deep RL model using in AWS RoboMaker and TensorFlow to enable the rover to successfully navigate a simulated Martian terrain.
- Independently developing Python Web-app designed to help people achieve goals, by assisting them break large goals into smaller milestones and through visual rewards assisting in their completion
- Finished top 5% in Air-BNB price prediction Kaggle challenge with a custom KNN implementation
- Currently participating in Kaggle Computer Vision Challenge
- Independently building Arduino robots to complete tasks such as lane detection and obstacle avoidance
- Building personal website with Flask, jQuery and CSS with elegant and creative design and animations

Work Experience

Researcher/Web App Developer *October 2019 – present*
Jerry Chen Laboratory, Boston University, Boston, MA
- Designed (Fusion 360) and 3D printed parts for automated mouse training cages to improve efficiency, reproducibility and accuracy of training of the animals
- Developing Python Web app to improve efficiency and ease of monitoring animal wellbeing and performance

Graduate Research Assistant/ Software Developer *March – August 2019*
LadHyX (Ecole Polytechnique), Paris, France
- Developed Python program, improving efficiency, accuracy and reducing analysis time of videos of T-cells

Undergraduate Research Assistant *Sept 2015 – Sept 2018*
Boston University Physics Department, Boston, MA
- Reduced costs and vendor-dependence by perfecting techniques for making high quality agar plates, liquid growth media and other materials needed for experiments
- Experimentally demonstrated for the first time that *H.Pylori* shape dictates geometry, dynamics and mechanical properties of colonies

Hobbies and Passions

- Electric and acoustic guitar. Persian Sitar. Briefly played as lead guitarist in a cover band.
- Soccer, Basketball and a variety of team sports. Hiking, running 5k,10k and half-marathons