

Yejun (Henry) Kim

Phone: (339) 223-3646, Email: wbu2yw@virginia.edu

Website: sagittarius-b-astro.github.io/pfolio

EDUCATION:

University of Virginia, Charlottesville, VA

Bachelor of Science, Double Major in Math and Aerospace Engineering, GPA (3.59)

2021-2025

WORK EXPERIENCE:

PI: Dr. Brian Park | Undergraduate Researcher | University of Virginia | Charlottesville, VA **Present**

- ❖ Processed vehicular sensor data using Python-OBd library on Raspberry Pi
- ❖ Assisted in development of Human-in-the-loop Connected Cruise Control

Makerspace Technologist | University of Virginia | Charlottesville, VA **Fall 2022 - Present**

- ❖ Conducted trainings on laser cutting, CNC milling, soldering, FDM / SLA printing, Arduino, CAD
- ❖ Developed and debugged code for interactive photo kiosk application using Python and Raspberry Pi
- ❖ Maintained code for frontend of makerspace website and collection of visitor information
- ❖ Designed internal mechanism and circuitry for university-commissioned pinball machine

PI: Dr. Osama Bilal | Undergraduate Researcher | University of Connecticut | Storrs, CT **Summer 2024**

- ❖ Fabricated vibrational isolation system for experiments in reprogrammable reciprocity
- ❖ Investigated 2D Fourier Transform and Gabor Transform for analog signal identification
- ❖ Designed and validated a turbine for submersible orientation control

Reliability Engineering Intern | Factory Mutual Insurance Company | Norwood, MA **Summer 2023**

- ❖ Assessed risk of failure and damages for calculation of premium fees for engineering systems
- ❖ Coded VBA macro in Excel that converted units of time for parameters of failure distributions
- ❖ Used Reliasoft Weibull++ to estimate lifetime of components using Weibull, Exp, Log distributions

PI: Dr. Artem Burdanov | Student Researcher | Harvard University | Remote **Fall 2020 - Summer 2021**

- ❖ Performed statistical analyses and data visualizations on Transit Timing Variations data sets for over three hundred exoplanets using Python packages
-

ACADEMIC HONORS / EXTRACURRICULARS:

Biomimicry and Underwater Robotic Submersible Team **Spring 2024 - Present**

- ❖ Used OpenCV to develop sonar navigation system for MATE ROV competition

Math Department Directed Reading Program **Spring 2023 - Fall 2023**

- ❖ Presented on topics in topology and category theory, guided by a graduate student

Geometry Lab **Spring 2023**

- ❖ Programmed hyperbolic visualizations with HTML framework, A-Frame

American Invitational Math Examination Qualifier **2019**

PROJECTS:

RASC-AL Capstone Project **Fall 2024 - Present**

- ❖ Developing short-term deployable dust removal system for use on Mars

Options Trading Visualizer Tool **Spring 2025**

- ❖ Coded Streamlit application with custom CSS to display option pricing using Black-Scholes and binomial models, VaR calculations for portfolios, and implied volatility for selected options from user input

AquaMetric Automatic Water Dispensing System for Tanks **Fall 2024**

- ❖ Verified fluid mechanics model using multivariate regression on sklearn and visualized using numpy
- ❖ Used SolidWorks for 3D-printed circuit enclosure and root finding methods in C++ implementation

External Clap Switch **Fall 2024**

- ❖ Designed enclosure and circuit to allow toggling of light switch without interacting with main power
-

Languages: Python, Java, R, Matlab, C++, C, HTML, CSS, SQL

Frameworks / Libraries: pandas, sklearn, seaborn, OpenCV, React, FastAPI, Django, MongoDB, Streamlit

Software: Simulink, Granta Edupack, Solidworks, Inventor, ANSYS, KiCad