Austen Gabrielpillai

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EDUCATION

Rutgers University – New Brunswick, New Brunswick, NJ — Aug. 2018 – May 2020
Master of Information | Data Science Concentration — GPA: 3.91/4.00

University of Illinois at Urbana-Champaign, Urbana, IL — Aug. 2013 – May 2017
B.S. in Engineering Physics | Computer Science Concentration — GPA: 3.05/4.00

WORK EXPERIENCE

Independent Researcher — Sept. 2020 - Present
Freelance — Monmouth Jct., NJ
- Working with Dr. Rachel Somerville as an external collaborator on galaxy evolution research
- Developing a Python module for querying and loading partitions of a 500 GB simulation suite
- Writing Python scripts using numpy and h5py for post-processing raw ASCII datasets into hdf5

Research Analyst | Simons Foundation — Jul. 2018 – Aug. 2020
Galaxy Formation Group – Center for Computational Astrophysics — New York, NY
- Worked with Drs. Somerville & Shy Genel on research applying galaxy simulation techniques
- Led 14-month project using Python to compare two cosmological model outputs at redshift z = 0
- Created framework for verifying algorithms using pandas, yt, and matplotlib in Jupyter Notebooks
- Increased accessibility of IllustrisTNG by using new algorithms to generate a series of catalogs
- Improved scalability of existing plotting processes by writing custom functions using matplotlib
- Applied expanded knowledge of C to convert binary outputs to an ascii file format
- Created a browser tool that enables real-time transformations of over 4 million simulated galaxies using Three.js and D3.js graphics on top of a Flask backend
- Added the ability to manipulate, visualize, and share data subsets on astrosims.flatironinstitute.org with Highcharts.js plots, URL querying, and a Python generation tool

Undergraduate Research Intern | TU Darmstadt — May 2016 – Aug. 2016
Atomic Physics Group – GSI Helmholtz Center for Heavy Ion Research — Darmstadt, Germany
- Manipulated high- and low-energy particle accelerators to learn about ion beam properties
- Analyzed 83 datasets using statistical calculations in Excel to validate experiment outputs
- Created a LabVIEW script to assist with FPGA communication as part of GUI development

TECHNICAL PROFICIENCIES

Programming	Python, JavaScript, Bash, TypeScript, HTML & CSS, R, C, C++, LaTeX
Software	Jupyter, GitHub, Microsoft Office, OriginLab, Eclipse, Tableau