JOY ROY

Email: jor115@pitt.edu ◇ LinkedIn: joy-roy-235b12144 ◇ Website: joyroy.org

EDUCATION

Ph.D. Biomedical Informatics, University of Pittsburgh School of Medicine 2020 - 2024

B.S. Bioinformatics and Computational Biology, University of Maryland Baltimore County 2015 - 2019
Member of Phi Beta Kappa

B.A. Mathematics, University of Maryland Baltimore County 2015 - 2019
Minor in Computer Science

SKILLS

Technical C/C++, Python, Bash, SQL, R, Matlab, LaTex
Packages Qt, Numpy, Pandas, Nipype, Sklearn, PyTorch, Seaborn, Networkx
Other Agile development, Object Oriented Programming, Docker, Linux/Unix OS environments, Scientific Writing and Research, Adobe Suite, Jira/Confluence, Data Science and Analytics

EXPERIENCE

Pre-Doctoral Fellow 2020 - Present
Pediatric Imaging Research Center, Children's Hospital of Pittsburgh *Pittsburgh, PA*

- Developed machine learning models based on Random Forests, Convolutional Neural Networks,etc to make prognostic inferences on medical imaging datasets.
- Applied Network Science to functional connectivity networks to make novel inferences about clinical populations
- Automated MRI preprocessing with custom pipelines using Python, Nipype, FSL, SciPy, and other libraries.
- Created and maintained virtual programming environments in Docker containers to use across machines.
- Wrote, coauthored, and reviewed research papers illustrating our methods and findings into reputable scientific journals and conferences

Software Engineer 2019 - 2020
Hughes Network Systems *Gaithersburg, MD*

- Maintained Jenkins pipelines for automated unit testing and continuous integration and continuous development.
- Designed and implemented real time software for protocols, algorithms, and products using C/C++
- Researched and tested system solutions with cross-functional teams to make applications perform optimally over IP-based wireless networks.
- Designed coding standards to establish better code writing and reviewing.
- Followed security protocol for handling of ITAR controlled technical data
- Worked on a Linux environment with Visual Studio

Research Assistant 2017 - 2020
Lobo Lab, University of Maryland Baltimore County *Baltimore, MD*

- Developed a computational methodology and mathematical formalism to encode and curate the morphological outcomes and gene expression patterns in planaria based on anatomical ontologies
- Lead a project team to develop a software tool written in C/C++ (with Qt framework) integrating this methodology with a GUI for the curation of data into a database managed in SQL.
- Monitored software version control through Mercurial/TortoiseHg and Git
- Published software and methods in Oxford Bioinformatics