Ashna Ramaswamy

Philadelphia, PA 19103 • ashnar@seas.upenn.edu • linkedin.com/in/ashnaramaswamy • ashnar05.github.io/ashnar05/

EDUCATION

University of Pennsylvania, School of Engineering and Applied Science | Philadelphia, PA **May 2025**
Candidate for Master of Science in Engineering: Bioengineering, Concentration in Computational Medicine

Boston College, Morrissey College of Arts & Science | Chestnut Hill, MA **May 2023**
Bachelor of Science in Biology: Cell & Molecular Biology, Minor in Computer Science

SKILLS

Computer: Python (TensorFlow, Keras, Scikit-learn, Numpy, Matplotlib, CNNs), C, C++, Java, R, HTML, CSS, JavaScript, SQL, Data Analysis, Microsoft Office (Excel, Word, PowerPoint, Access, Outlook)
Laboratory: Human Sputum Sample Processing, siRNA, Ligand Stimulation, iPSC Culture and Maintenance, Mammalian Cell Culture, Immunohistochemistry, cDNA Synthesis, Agarose Gel Electrophoresis, PCR and qPCR, Restriction Enzyme Digestion, ELISA, Plasmid Amplification, Microscopy

PROFESSIONAL EXPERIENCE

University of Pennsylvania School of Nursing | Research Assistant | Philadelphia, PA **January 2024 - Present**
- Model GWAS data of 240 patients in R to identify relationships between specific genotypes, SNP loci, and clinical data.
- Cultivate THP-1 macrophage cells, perform siRNA knockdown of target genes, and stimulate cells with ligands of interest to direct the investigation of novel pathways in Tuberculosis.

Penn Biotech Group | Team Member | Philadelphia, PA **August 2024 – Present**
- Perform market research for a major biotherapeutics discovery and development company to evaluate competing genetic medicines and biologics for Hemophilia A, Sickle Cell Disease, and Hereditary Hemochromatosis.
- Analyze mechanisms, costs, efficacy, and safety of genetic medicines relative to target product profiles and indication criteria in each disease area.
- Consolidate findings into comprehensive reports outlining the competitive landscape and present recommendations for high-potential assets in weekly team meetings.

Novo Nordisk | Intern, Student Assistant | Princeton, NJ **June 2022 – November 2022**
- Ideated, researched, and incubated 3+ concepts for vision and motor impairment solutions, contributing to product pipeline development under Agile methodologies.
- Analyzed 17+ million patient data points related to obesity using SQL, delivering actionable insights to accelerate tool development for patients and HCPs in biweekly meetings.
- Conducted comprehensive stakeholder interviews to develop Best Practice Guidelines, Meeting Minutes, and Commitment Letter templates for academic partnerships, resulting in efficient communication and standardized processes across the organization, enhancing collaboration.
- Enhanced team productivity and project tracking for 20+ team members by transitioning processes from Microsoft Teams to Smartsheet.
- Coordinated data entries in Smartsheet for 2 teams to track productivity and project progress.
- Led and scheduled meetings for 10+ team members alongside senior managers to support productivity.

PROJECTS

Master's Thesis | Radhakrishnan Lab | Philadelphia, PA **March 2024 – Present**
- Research an agent-based model of Wilm's tumor using PhysiCell, Linux-based commands, and custom modules in C++.
- Simulate 2D tumor and modulate microenvironment-related parameters to observe cell behavior and effects on chemotherapy efficacy.
- Visualize microenvironment and cell data using Python, Pandas, and Matplotlib, generating time series plots.

COURSEWORK

Computer Science: Quantitative Principles of Drug Design, Molecular Modeling and Simulations
Biology: Drug Discovery and Development, Applied Medical Innovation II, Molecular Diagnostics for Precision Medicine, Immune Engineering, Tissue Engineering, Stem Cells, Drug Delivery and Proteomics
Math: Foundations of Engineering Mathematics I, Linear Algebra, Statistics

LEADERSHIP

Social Media Chair | Master's Association of Bioengineers | Philadelphia, PA **August 2024 – Present**
- Plan and publicize events and career-related opportunities in collaboration with graduate groups and faculty, enhancing student involvement by 20.9%.