Kevin McCoy

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RESEARCH INTERESTS

I am passionate about using statistics and computer science principles to solve pressing biomedical problems. My particular research interests include biostatistics, machine learning, data science, computational statistics, and network data.

EDUCATION

Georgia Institute of Technology, Atlanta, GA *May 2022*

- Candidate for *Bachelor of Science in Biomedical Engineering*
- GPA: 4.0 / 4.0

RESEARCH EXPERIENCE

Technical Team Lead — Laboratory for Pathology Dynamics, Georgia Tech *May 2020 — Present*

- Lead a research team of ten undergraduate students.
- Use machine learning techniques to predict repurposed drugs and risk factors for COVID-19.
- Visualize data to provide quickly understandable insights for front-line healthcare workers.
- Presented my research at the 2020 annual Biomedical Engineering Society conference and 2021 Georgia Tech Spring Symposium.

Research Assistant — Serpooshan Lab, Georgia Tech *January 2019 — April 2020*

- Used 3D bioprinting techniques to advance the understanding of hypoplastic left heart syndrome, pulmonary atresia, and other congenital heart defects.
- Used computational fluid dynamics and 4D-MRI to evaluate the hemodynamics of congenital heart defects.
- Presented my research at the 2019 Georgia Tech Spring Symposium.

TEACHING EXPERIENCE

Teaching Assistant — Georgia Tech College of Computing *January 2020 — Present*

- Teach an introduction to computer science course to GT engineering students.
- Lead a weekly recitation of 30 students, hold weekly office hours, create homework, and grade exams.

PROFESSIONAL EXPERIENCE

Data Analyst — Georgia Tech Office of Research *May 2021 — Present*

- Develop data visualization dashboards to better communicate campus research administration data and research commercialization data.
- Enhance visibility into research operations, extract value from internal and external data sources, and provide tools to assist leadership with strategic decision making.

Engineering Technician — PepsiCo Research and Development *June 2019 — August 2019*

- Designed and executed experiments to ensure that new products met all user needs and design inputs, and that internal quality standards were maintained.

SERVICE AND OUTREACH

Emergency Medical Technician — Newtown Volunteer Ambulance Corps *May 2018 — Present*

- Volunteer as a first responder to emergency 911 calls to provide efficient and immediate care and transport to the critically ill and injured.

Undergraduate Research Ambassador — UROP *August 2019 — December 2020*

- Help GT students find research opportunities by facilitating connections between interested students and faculty with open positions.
- Mentor GT students to help them advertise their research.

PUBLICATIONS

McCoy K, Gudapati S, He L, Horlander E, Kartchner D, Kulkarni S, Mehra N, Prakash J, Thenot H, Vanga SV, Wagner A, White B, Mitchell CS. Biomedical Text Link Prediction for Drug Discovery: A Case Study with COVID-19. *Pharmaceutics*. 2021; 13(6):794. https://doi.org/10.3390/pharmaceutics13060794

Theus A, Tomov M, Cetnar A, Lima B, Nish J, McCoy K, Mahmoudi M, Serpooshan V. Biomaterial approaches for cardiovascular tissue engineering. *Emergent Materials*. 2019; 2(2):193-207. https://doi.org/10.1007/s42247-019-00039-3

PRESENTATIONS

Using Unsupervised Machine Learning Techniques and 3D Visualization Tools to Better Understand Cardiovascular Disease
UROP Spring Symposium *April 2021*

Using Text Mining Link Prediction to Expedite COVID-19 Research
Biomedical Engineering Society *October 2020*

3D Bioprinted Hemodynamic Flow Models of the Developing Heart to Study Congenital Heart Disease
UROP Spring Symposium *April 2019*

HONORS AND AWARDS

Faculty Honors *January 2019 — Present*

- Faculty Honors Letters are awarded to undergraduate students who achieve a 4.0 GPA, while taking at least 12 credit hours worth of coursework, be in good academic standing, and have not withdrawn from a class. Received after all semesters at Georgia Tech.

Con Edison Scholarship *May 2018*

- 4-year scholarship to attend the Georgia Institute of Technology.

SKILLS

Computer: Data Analysis, Data Cleaning, Data Visualization, Python (Pandas, NumPy, Matplotlib, Seaborn, Scikit-Learn), MATLAB, Linux, Git, Terminal, LaTeX, Neo4J, Cypher Query Language, Mathematica, Tableau, Microsoft Office, Fusion 360

Interpersonal: Leadership, Teaching, Mentorship, Teamwork

Medical: CPR, AED, Oral Airways, Manual Airway Techniques, BVM Ventilation, Oxygen Therapy, Airway Functioning, Manual BP, Auto BP, Auto Injector, Bleeding Control, Assisted Childbirth, Assisted Complicated Childbirth, Humidified Oxygen, Venturi Mask, Automated Transport Ventilators, Nasal Airways, Pulse Oximetry, Assisted Medications, Spinal Immobilization, Splinting, Tourniquet

Languages: English (Native Proficiency), German (Elementary Proficiency)

CERTIFICATIONS

Emergency Medical Technician License *May 2018*

- Licenses currently held in Georgia and Connecticut.

CPR Certification, American Heart Association *August 2019*

MEMBERSHIPS

Biomedical Engineering Society *October 2020 — Present*