

Benjamin Kelly

UNDERGRADUATE COMPUTER SCIENCE STUDENT

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Education

Rensselaer Polytechnic Institute

B.S. in Computer Science

- GPA: 4.0/4.0

Troy, NY

Aug. 2018 - May 2022 (Projected)

Skills

Programming C/C++, C#, Java, Python, Linux, Unity3D, Unreal Engine 4, OpenGL

Coursework Distributed Systems and Algorithms, Advanced Computer Graphics, Economics and Computation, Linear Algebra, Introduction to Artificial Intelligence, Programming Languages

Experience

Amazon Web Services

Software Development Engineering Intern

- Worked as intern within Amazon Games Publishing Services on features related to account linking and in-game social features.
- Developed and owned project to integrate QR codes into user experience flow, working with UX and Project Management to design requirements.
- Worked on needed bug fixes and feature improvements related to AGPS Persona services.

San Francisco, CA

May. 2021 - Aug. 2021

Western Digital

Firmware Engineering Intern

- Helped design and implement firmware for hard drives, specifically related to formatting.
- Deployed C++ code onto an embedded environment.
- Worked in a fast paced Scale Agile Framework (SAFe) including training in Agile.

Longmont, CO

Sep. 2020 - Dec. 2020

Rensselaer Polytechnic Institute

Teaching Assistant

- Worked as an undergraduate TA for six semesters for classes including Data Structures, Principles of Software, and Introduction to Artificial Intelligence.
- Designed and graded exams and homeworks, as well as run office hours and labs.
- Worked one-on-one with students reinforcing new concepts, providing feedback, and helping to debug code.

Troy, NY

Jan. 2019 - Present

Research

Gerrymandering Under Uncertain Preference Profiles

Research Project Under Supervision of Professor Lirong Xia

- Researched the problem of gerrymandering as a graph problem under imperfect voter information.
- Worked on problem formalization, algorithm design, theoretical complexity, and experimental results.
- Work published as *Gerrymandering under Uncertain Preferences* as a student abstract at AAAI 2022 Conference including poster presentation.
- Paper available at <https://www.benjaminkelly.org/papers/gerrymandering.pdf>

Troy, NY

Jan. 2021 - Present

Blockchain Biomedical Data Sharing

Undergraduate Researcher

- Worked with a research team in RPI's IDEA center developing a biomedical research data sharing system built with semantic web technologies on the Ethereum blockchain using smart contracts.
- Designed and implemented an ontology to represent the biomedical data lifecycle, including types of data sharing agreements.
- Researched intersection of blockchain technologies and ontologies and built on existing work when designing the new system.

Troy, NY

Jan. 2021 - May 2021

HEALS Project

Undergraduate Researcher

- Worked with the HEALS project, a collaboration between IBM and RPI to use artificial intelligence and semantic web technologies to aid in determining treatment for patients with diabetes.
- Helped design and implement a UI interface integrated with RDF graphs for physicians' use in exploring treatment options.
- Helped design and verify unit tests for an ontology autonomic deduction tool within whyis, a graph creation and reasoner tool.

Troy, NY

May 2020 - Aug. 2020

Submittly

Developer and Researcher

- Submittly is RPI's open source grading platform and programming autograding service used by most computer science classes.
- Designed online office hours queue system utilized by most of the computer science classes on campus.
- Designed online polling system to aid in transition to hybrid classes for the fall of 2020.
- Co-authored a poster being presented at SIGCSE 2022 on correlating student plagiarism with assignment "late day" usage.
- Designed a short course to bridge RPI's Computer Science 1 and Data Structures courses to help students prepare. Designed lessons and questions, including creating autograding configurations for the course.

Troy, NY

Oct. 2019 - Present

Leadership and Awards

RPI Chapter of Upsilon Pi Epsilon, Computer Science Honors Society

Troy, NY

Vice President, President

May, 2019 - Present

- Served as Vice President in 2020-2021 academic year and President in 2021-2022 academic year.
- Oversaw individual committees as well as maintaining the day to day operations of the organization, including during the COVID-19 pandemic and the transition to and from online learning.

Rensselaer Polytechnic Institute Founder's Award of Excellence

Troy, NY

Recipient

November 2021

- The Founders Award of Excellence honors students who embody the qualities of creativity, discovery, and leadership, and the values of pride and responsibility.
- About 1% of graduate or undergraduate students are honored each year.

Rensselaer Polytechnic Institute 4.0 Award

Troy, NY

Recipient

November 2021

- Awarded to students who maintain a 4.0 GPA after 90 credit hours of work.
- Twenty students (1% of seniors) were honored with this award this year.