

Siyuan (Ricky) Peng

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Education

Colby College

Bachelor in Computer Science and Mathematics Double Major (GPA: 3.96 / 4.0)

Waterville, ME

08/2020 – 05/2024

- Object Oriented Design, Neural Networks, Machine Learning, Data Structures & Algorithms, Probability, Linear Algebra, Discrete Maths

CodePath Advanced Certificate in Technical Interview Prep (Summer 2022)

Remote

Mahindra United World College India International Baccalaureate

Maharashtra, India

Skills

- Languages and Tools:** Python, JavaScript, Java, HTML, CSS, Git, Heroku, Google Cloud Platform, OpenCV, Twilio, PyTorch, SQL
- Frameworks:** ReactJS, GatsbyJS, Bootstrap, NextJS, JavaFX, Sass, NodeJS, ExpressJS, MongoDB, Django, Flask, Java Servlet, Maven

Relevant Experiences

Software Engineering Fellow

Remote

Google Software Product Sprint (Project Advisor: Sean Kau, Google)

05/2022 – Present

- Collaborated within a team to design and implement a web application in Java, JavaScript, & Google Cloud Platform APIs (App Engine)
- Contributed to open-source in Git, integrated data storage, lead distributed development, supervised by Software Engineer at Google

Software Engineering Intern

Remote

CodeDay Labs (Project Advisor: Neel Malik, Microsoft)

06/2022 – Present

- Collaborated within a team to design and implement an automated Checklist web application in ReactJS, MongoDB, and GatsbyJS
- Responsible for frontend development, conducted code review, made 5 version iterations, supervised by Principle Engineer at Microsoft

Research Assistant

Waterville, ME

Software Engineering and Human Factors Lab, Colby College (Supervisor: Dr. Naser Al Madi)

01/2021 – Present

- Led eye movement biometric project, cleaned and preprocessed dataset from Facebook Reality lab, and built machine learning pipeline (Random Forest & Neural Network) to improved authentication accuracy to 73%, won Best Technical Abstract award at ETRA '22
- Led and developed Fix8 ("Fixate"), an semi-automated eye movement correction toolkit with 8 machine-learning algorithms
- Developed Eye Movement Toolkit, leveraged OpenCV to scan word boundary, developed eye movement data visualization methods

Projects

LocationPin (Collaborated in Google Software Product Sprint)

05/2022 – 08/2022

- A full stack web application that reports medical emergency and send help-needed requests, and notifies users nearby to view and help
- Frontend in **HTML/CSS/JavaScript**, backend in **Servlet**, **Google Data Storage**, **Google Map**, notification in **Firebase**, version control in **Git**

Checklist (Collaborated in CodeDay Labs with Microsoft Engineer)

06/2022 – 08/2022

- A full stack web application that automates to-do list workflows, allows users to create, categorize, and share to-do list across teams
- Frontend in **ReactJS**, **GatsbyJS**, backend in **NodeJS**, **GraphQL**, **MongoDB**, hosted and deployed in **Netlify**, version control in **Git**

ColbyEat (Personal Product)

04/2022 – 05/2022

- A full stack web product with 200+ users at Colby that sends users messages of daily dining menu based on dietary/location preferences
- Frontend in **ReactJS**, **GatsbyJS**, backend in **Django**, **NodeJS**, **MongoDB**, hosted and deployed on **Heroku**, messages API in **Twilio**

EMIB (Research Project)

05/2021 – 06/2022

- Eye movement based authentication with cognitive and linguistic features, improved accuracy from 60% to 73% in related field
- Machine learning and deep learning in **Scikit-learn**, **OpenCV**, data processing in **Pandas**, **Numpy**, cloud computing in **Google Cloud**

Java IDE (Course Project)

02/2022 - 05/2022

- A Java OOP-based IDE with compiler, includes code formatting, console I/O, keywords highlighting, syntax checking, find and replace

Publications

- Siyuan Peng**, Naser Al Madi. 2022. An Eye Opener on the Use of Machine Learning in Eye Movement Based Authentication. In 2022 Symposium on Eye Tracking Research and Applications (ETRA '22), June 8-11, 2022, Seattle, WA, USA. ACM, New York, NY, USA, 2 Pages. <https://doi.org/10.1145/3517031.3531631> (Best Technical Abstract)
- Siyuan Peng**, Naser Al Madi. 2021. Eyes, Window to Your Soul, or Key to Your Computer? Towards Eye Movement Based Authentication. Colby Undergraduate Summer Research Retreat (CUSRR 2021), July 29-30, 2021, Waterville, ME, USA.
- Naser Al Madi, **Siyuan Peng**, and Tamsin Rogers. 2022. Assessing Workload Perception in Introductory Computer Science Projects using NASA-TLX. In Proceedings of the 53rd ACM Technical Symposium on Computer Science Education V. 1 (SIGCSE 2022), March 3-5, 2022, Providence, RI, USA. ACM, New York, NY, USA, 7 pages. <https://doi.org/10.1145/3478431.3499406>

Awards

- Colby College Presidential Scholar, \$3,000 grant
- Davis United Word College Scholar, \$100,000 grant
- FIRST Tech Challenge India 2019: National Champion
- Canadian Computing Competition 2019: Distinction