Tejas Krishnan

Mathematics and Computer Science Student at Oxford

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Skills & Abilities

Proficient in Haskell, C++, Java, Python, React, and Swift. Avid competitive programmer well-versed in data structures and algorithms. Passionate problem solver with project experience in full-stack development, deep learning, image processing, web scraping, NLP and NLU, and web design. Thrives in a collaborative setting and picks up new skills quickly, both technical and social.

Experience

Locaze – Software Developer   Aug 2023 – Present
- Connected the front-end and back-end of an IOS/Android app made with React, Python, and SQLite.
- Used image processing techniques and a pretrained gaze tracking model to track eye movement in videos.
- Devised metrics from eye movement data to determine smoothness of eye-movement and reaction time.

HPQC Labs – Research (Computational Chemistry)   Jul 2023 – Aug 2023
- Used the PySCF module in Python and Octave to calculate and fit potential energy curves for molecules.
- Learned about point groups for molecules to calculate Z-matrices and drew these molecules in Avogadro.
- Did preliminary work on training a chemistry-specific large language model on data from chemistry textbooks and papers.

BitWise Academy – Summer Intern   Jun 2022 – Sep 2022
- Learned React, Bootstrap, client-server communication in JavaScript, and basics of NLP for text classification.
- Developed an admin interface in React to display user and requests information for a Python-based chatbot application.
- Scaled the chatbot on an EC2 Linux instance using Docker and Kubernetes.

Mathematics Tutor   Mar 2019 – Present
- Taught middle and high school math to private clients.
- Developed a curriculum to support the students and supplement their learning with new topics.

Education

University of Oxford, Oxford, UK   Oct 2022 – Jun 2026
BA/MSc in Mathematics and Computer Science
International School Basel, Basel, Switzerland - IB Diploma   Aug 2017 – May 2022
International Baccalaureate Diploma Program – IB score: 45/45

Honors & Certifications

- IBM Full Stack Software Developer Professional Certificate (to be completed by end of September 2023)
- Swiss Math Olympiad Bronze Medalist and represented Switzerland at the Middle European Math Olympiad (MEMO)
- Swiss Informatics Olympiad Finalist
- National Merit Finalist (USA)
- UKIEPC (regional ICPC contest) 23rd team in the UK

Projects (GitHub: https://github.com/krishte)

Timetable Scanner – in final stages of development   July 2023 – Present
- Developed a Python program using OpenCV and PyTesseract that parses a digital timetable given in a PNG or JPEG format and produces an ICS file that can be uploaded to any calendar service. Uses a range of image processing techniques including a modified Hough Line Transform and OCR. To be deployed on the cloud with a React front-end.

Pestle+ - on Chrome Web Store with over 700 users   May 2022 – Sep 2022
- Works as a Chrome extension for an IB question bank website called Pestle. Uses an NLP-based algorithm that combines sentiment analysis and named entity recognition on examiners' remarks to rank questions by difficulty. Additionally, uses keyword extraction and document distance to find related questions for each question.

TRACR: Scheduling App – previously on Apple App Store   Jun 2020 – Nov 2020
- Led a team of four to develop an app that schedules time to work on assignments given, as input, the length and due date of the assignments, a list of working hours, and other preferences. Learned Swift, SwiftUI, and the Google Classroom API, and designed a complex scheduling algorithm. Beta tested in school and published on Apple App Store until Jun 2023.

Leadership & Hobbies

- Coached high school's math competition team in competition techniques for fast problem-solving
- Violinist in the Oxford University Philharmonia and lead violinist in a regularly performing piano quartet
- Duke of Edinburgh Silver Award