

Rohan Chatterjee

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Education

California State University – Los Angeles

Aug 2018 – May 2023

B.S. in Computer Science (CSULA GPA: 3.94)

- Summa Cum Laude
- Minor in Mathematics
- Minor in Biomedical Engineering
- Member of the Honors College

Relevant Coursework

Algorithms, Artificial Intelligence, Biomedical Engineering, Data Science, Data Visualization, Machine Learning, Numerical Analysis, Software Engineering, Principles of Databases

Research Interests

- Machine Learning and AI
- Computer Vision
- Medical Informatics
- Computational Biology
- Biomedical Image Processing
- Data Visualization

Peer Reviewed Publications

T. Hong, F. Mohammadi, **R. Chatterjee**, E. Chan, M. Pourhomayoun, K. Nouri-Mahdavi, V. Mohammadzadeh and N. Amini, “A Novel Similarity Measure for Retinal Optical Coherence Tomography Images”, *Proc. of the International Symposium on Visual Computing (ISVC)*, Oct. 2021, pp. 761-772 (Acceptance Rate: 30%).

R. Chatterjee, D. Sagar, F. Mohammadi, A. Vaishya, M. Pourhomayoun, M. Kaur, J. Soo Lim and N. Amini “Deep Residual Distilled Convolutional Learning for Detection of Large Vessel Occlusion in Ischemic Stroke Patients”, *Proc. of the IEEE International Conference on Artificial Intelligence for Medicine, Health and Care (AIMHC 2024)*, Feb 2024 (Acceptance Rate: 28%).

A. Mousavian, J. Jarkaneh, M. Pourhomayoun, M. Kaur, **R. Chatterjee**, S. Besharati, K. Nouri-Mahdavi and N. Amini “Deep Learning Image Analysis of Macular Optical Coherence Tomography Angiography Images for Detection of Progression in Glaucoma”, *Proc. of the IEEE International Conference on Artificial Intelligence for Medicine, Health and Care (AIMHC 2024)*, Feb 2024 (Acceptance Rate: 28%). (**Best Paper Award**).

R. Chatterjee, D. Sagar, F. Mohammadi, A. Vaishya, M. Pourhomayoun, M. Kaur, J. Soo Lim, N. Amini, "Detection Of Large Vessel Occlusion In Ischemic Stroke Patients Using Deep Residual Distilled Convolutional Networks", being prepared for submission to the *International Journal of Semantic Computing*, May 2024

Skills

Fluent In	Familiar with
Languages: Java (5 years), Python (4 years), JavaScript, HTML and CSS (3 years)	Languages: Bash, MATLAB, Kotlin, R
Tools: Tableau, Git, MySQL, MongoDB, PostGreSQL, Weka	
Libraries: NumPy, Pandas, Scikit-Learn, Pytorch, Matplotlib, Seaborn, TensorFlow	

Research Experience

Undergraduate Researcher – Machine Learning & Sensing Lab Nov 2020 – Current

- Development of new similarity measurements for retinal optical coherence tomography images and evaluation of their efficacy
- Submission and presentation of multiple research paper
- Development of **machine learning** algorithms for identification of high-risk COVID-19 patients
- Independently research on current topics pertaining to **Bioinformatics** and **Data Visualization**

Bruins In Genomics Research Intern – Xiao Lab, UCLA June 2022 – Aug 2022

- Research to better understand the genetic regulation of RNA alternative splicing in schizophrenia by discovering and analyzing allele-specific splicing patterns in the disease.
- Implementation of custom lab created pipeline on RNA-Sequenced data of the prefrontal cortex using python and bash to identify and analyze single nucleotide polymorphism in DNA related to RNA splicing.
- Identified 25 genes with allele-specific alternative splicing patterns and 32 genes with ASE allele-specific expressions linked to Schizophrenia.

Teaching Experience

Teaching Assistant, Department of Computer Science at CSULA Aug 2021 – June 2023

- Assisted the instructor in courses including:
 - Introduction to Programming I
 - Data Visualization
 - Computer Graphics
- Graded quizzes, assignments, and exams.
- Led weekly discussion sections.
- Held office hours and assisted students.

Lead Tutor, Center for Academic Success (CAS) at CSULA Dec 2019 – June 2023

- Led a team of tutors in providing one-on-one and small group instruction in a variety of math and computer science courses, including:
 - Introduction to Programming I & II
 - Calculus I
 - Programming with Data Structures
 - PreCalculus: Functions and Trigonometry

- Collaborated with other students, tutors and faculty to ensure the quality of instruction.
- Led workshops for up to 30 students on topics such as time management, study skills, and course material.
- Assisted in the critical course program that supported professors and helped modify/improve the syllabus and course structure based on student needs.

Mentor

Aug 2021 – May 2022

- Biomedical Engineering Women Innovators (BE WINNORS) Program (Sponsored by Xilinx Inc.)
 - Instructing Android development, Data Analytics and Data Visualization
 - Hosting workshops on relevant academic and technical skills
 - Guiding students in designing and building their application

STEP Supplemental Instructional Leader

June 2021 – Aug 2021

- Summer Transition to ECST (ECST) at CSULA
 - Working with incoming Pre-Engineering and Pre-Computer Science freshmen One-on-One and in small groups.
 - Creating specific course-related assignments in a variety of college-level academic courses.

Relevant Projects

Genetic Factors Determining COVID-19

Aug 2022 – April 2023

Susceptibility and Severity

- Led a team in investigating clinical and genetic factors contributing to poor prognosis in COVID-19 patients.
- Conducted in-depth analysis of medical records from PCR-confirmed COVID-19 cases.
- Developed logistic multivariate regression models to identify independent predictors of death, ICU admission, and hospitalization in COVID-19 patients.
- Explored the relationship between blood type and COVID-19 severity and mortality.
- Examined the impact of geographical, economic, and social factors on COVID-19 cases, vaccination rates, and mortality.
- Employed a multi-branch approach to effectively segment deliverables, ensuring thorough coverage of all aspects related to COVID-19 susceptibility and severity.

Similarity Measures for Optical

Nov 2020 – April 2022

Coherence Tomography

- Utilized python to compare the performance of novel similarity measures for retinal optical coherence tomography (OCT) images.
 - Implementation of a new variation of the structural similarity index (SSIM)
 - Segmentation of inner and outer boundaries of retina in OCT images
 - Co-authored a manuscript accepted by ISVC 2021

Honors and Recognitions

- **Best Paper Award, AIMHC 2024**
- **LSAMP Proud Scholars Award 2023**
Recognized leadership, academic achievement and research accomplishments.
- **Dean's List**
Continued recipient of the Dean's List Honor award from Fall 2018 – Spring 2023
- **UCLA BIG Summer Outstanding Student Award**
- **Member of CSULA's Honors College**
- **Cal State LA Alumni Association and Scholarship**
- **Recipient of Edison STEM Scholarship**
- **Recipient of CSULA's ECST Scholarship**