Rohan Chatterjee

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Education

University of California, Los Angeles (UCLA) **Starting Sep 2024**
M.S. in Data Science
- Department of Computational Medicine : Biomedicine
- Biodesign AI Fellowship

California State University – Los Angeles (CSULA) **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. Chetterjee**, 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", *accepted for publication in the International Journal of Semantic Computing, to be published in Late 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
  - Programming with Data Structures

    - Calculus I
    - 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 Susceptibility and Severity **Aug 2022 – April 2023**

- 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 Coherence Tomography **Nov 2020 – April 2022**

- 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

- **UCLA Biodesign AI Fellowship**
- **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**