

Razakh Taufeq

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Education

University of Southern California Los Angeles, CA, USA

M.S in Computer Science(*Scientists & Engineers*) May 2019 - May 2021

Coursework: Analysis of Algorithms, Multimedia Systems Design, Operating Systems, Web Technologies, Database Systems Design

M.S in Mechanical Engineering(*Fluid Mechanics*) August 2016 - May 2018

Coursework: Mechatronics, Engineering Analysis, Strategic Management of Technology

Grader: AME 516 - Convection Process | Tutor: AME 536 - Energy & Propulsion

Osmania University Hyderabad, TG, India

B.E in Mechanical Engineering, *First Class Distinction* September 2012 - May 2016

Thesis: “*The effects of Compression Ratio on engine using castor seed oil biodiesel*”

Experience

USC Collaboratory for Advanced Computing and Simulation Los Angeles, CA, USA

Visiting Researcher May 2019 - Present

- Implemented a C++ library to solve hamiltonian for MD systems using Pytorch’s automatic differentiation. Soon to be submitted to a computational physics journal.
- Implemented one sided active and passive synchronization constructs for remote memory access between processes on a massively parallel molecular dynamics simulation with sparse matrices

USC Biokinesiology & Physical Therapy Los Angeles, CA, USA

Research Assistant June 2018 - July 2018

- Developed an interactive VR experience to rehabilitate bradykinesia in patients diagnosed with Parkinson’s Disease
- Wrote C# wrappers implementing a MIDI like protocol (OSC) for fine tuning properties within the interactive space from a health practitioners mobile device

Projects

- Developed a wearable system for visually impaired users to navigate safely by using object detection and haptic feedback (<https://youtu.be/wjdRSWDorhg>)
- Implemented video rank for a query snippet as a part of CSCI 576 Multimedia Systems Design. Extracted features from RGB histograms, Mel frequency coefficients, SIFT detectors to achieve accurate ranking(<https://github.com/TaufeqRazakh/VideoQuery->).
- Developed a Piazza like site using Rails for educators to share zoom links for classes and discussions. (https://github.com/TaufeqRazakh/ZoomMate_Backend)
- Implemented an early Unix like operating system as a part of CSCI 402
- A YouTube tutorial series for Apple’s METAL API (<https://youtu.be/j21cmamx-jM>)

Skills

Programming: Scala, Java, C, C++, Swift, Python, C#, HTML, JavaScript, SQL

Tools: Pytorch, Rails, Mathematica, OpenCV, Git, Emacs, SQL, JSON, Vue/React, PaaS