

Tom Regpala

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RESEARCH INTERESTS

GPU Architecture, High-Performance Computing, Machine Learning, Energy Efficiency

EDUCATION

California State University, Bakersfield
Bachelor of Science in Computer Engineering

Fall 2021 — Present
Cumulative GPA: 3.42/4.00

ACADEMIC EXPERIENCE

CSUB - Department of Natural Sciences, Mathematics, and Engineering

Undergraduate Research Assistant

Fall 2024 — Present

- Supervisor: Anjana Yatawara, Ph.D.
- Current Project: Integrating Long Short-Term Memory (LSTM) Recurrent Neural Networks (RNNs) into Traditional Integer GARCH Models for Influenza Hospitalizations Forecasting

CSUB - Information Technology Services

Information Technology Assistant - Student Lead

Fall 2021 — Present

- Supervisor: Ian Barnette
- Provided Tier 1 and Tier 2 support for diverse tech needs including, but not limited to: operating systems, VoIP telephone systems, and enterprise applications, while ensuring seamless network, domain, and online campus account operations.
- Opened and resolved over 30+ weekly tickets via ServiceNow to support the entire CSU campus; serving VIPs, staff, faculty, and students.
- Trained, mentored, and led a high-performing team of 20 IT student hires in adhering to campus procedures and IT duties.
- Implemented and enforced IT security protocols, and engaged in identifying and mitigating phishing attempts in campus-wide email communications.
- Maintained and managed group policies with Active Directory (AD), ensuring compliance with security protocols and streamline access control across the campus infrastructure.

PROJECTS

Trends of Air Pollution-Related Disease

UC Merced CV PATH Summer Experience

Summer 2024

- Faculty Mentor: Anjana Yatawara, Ph.D.
- Queried datasets from various public government repositories including the US Census Bureau and the CDC.
- Learned the R programming language to develop scripts for statistical computing.
- Centralized and processed data through RStudio for correlation, geospatial, and multilinear regression analysis.
- Expressed finding through a research paper, poster symposium, computer program, and animated geospatial data.

Integrating LSTM RNNs into Traditional Integer GARCH Models for Influenza Hospitalizations Forecasting

CSUB - Undergraduate Research

Fall 2024 — Present

- Faculty Mentor: Anjana Yatawara, Ph.D.
- Constructing an LSTM RNN with an emphasis on utilizing GPU acceleration to optimize performance.
- Integrating the LSTM RNN into traditional integer GARCH models for enhancing influenza hospitalization forecasting.
- Querying data from publicly available repositories, with an emphasis on influenza hospitalizations and environmental factors.

Modular Guitar Pedalboard (Ongoing)

CSUB - Senior Capstone Project

Fall 2024 — Present

- Faculty Mentor: Amin Malekmohammadi, Ph.D.
- Designing a central controller capable of daisy-chaining power and passing guitar signal for integration with commercial effects pedals.
- Creating a distortion effects pedal capable of integration with the central controller.
- Developing and maintaining a business model and comprehensive project report leading up to the current project phase.

SELECTED COURSES

Mathematics: Probability Theory, Linear Algebra, Multi-variable and Vector Calculus

Computer Science: Computer Architecture II: Organization (Spring 2024), Operating Systems, Data Structures

Engineering: Embedded Systems (Spring 2024), Microprocessor System Design (Spring 2024), Analog Circuits, Digital Circuits, Digital Signal Processing, Wireless Communications,

AWARDS

NSME Dean's List California State University, Bakersfield Honors award for students with a term GPA of 3.25 or higher as a full-time student. Spring 2022 — Present

OTHER EXPERIENCES

Kaibigan - Filipino American Student Organization California State University, Bakersfield
Member Fall 2023 — Present

- Promoted enrichment of Filipino heritage and history through community culture events.
- Explored Filipino-American identity through guest lecturers during club activities.
- Raised funds for the organization and the Filipino Excellence Scholarship through local sponsorships.

CSUB Lee Webb Math Field Day California State University, Bakersfield
Volunteer Event Assistant Fall 2022 — Present

- Volunteered assistance alongside CSUB Faculty in running an event for high school mathematics students to visit CSUB and participate in various competitive mathematics events.
- Proctored and graded exams for various events such as the team medley, individual medley, and Rubik's cube speed solving.

SKILLS

- **Programming:** C / C++, R, Python, MATLAB
- **Software:** PowerShell, ServiceNow, Visual Studio Code, AutoCAD, RStudio, Microsoft 365, MultiSim
- **Operating Systems:** Windows, MacOS, Linux (Ubuntu)

REFERENCES

Anjana Yatawara, Ph.D. *Department of Mathematics*
California State University, Bakersfield
 E-mail: ayatawara@csub.edu
 Scholar Profiles: CSUB - Mathematics Full-Time Faculty — Google Scholar — LinkedIn

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