KISAN THAPA

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EDUCATION

University of Massachusetts Boston   Boston, MA
PhD in Computer Science   Fall 2021 - Present
- **Research Interest:** Computational Biology, Machine Learning, and Pathway Analysis. To develop computational methods to study biological networks and software tools to help biologists analyze their data using machine learning and deep learning.
- **Relevant Coursework:** Analysis of Algorithms; Object-Oriented Software Design; Machine Learning; Artificial Intelligence; Mobile Applications; Computer Vision; Neural Network; User Interface Design

Pokhara University   Pokhara, Nepal
Bachelor of Computer Engineering (GPA 3.8/4.0) **[Dean's List 2017, Top 3]**   Aug 2013 - Sep 2017

EMPLOYMENT

Graduate Research Assistant   **Network Biology Lab**   **Sep 2021- Present**
- Redesigned the Causalpath webserver with Newt visualization integration, resulting in a 2x increase in user engagement and enabled high responsiveness for large-scale graphs.
- Developed a transcription factor activity prediction tool that speeds up analyses by 15x through parallelization and vectorization.
- Implemented a Python-based pipeline to implement a Single Cell Pathway Analysis Tool, streamlining data processing and analysis, resulting in a 50% reduction in analysis time and enabling faster identification of key biological pathways.
- Collaborated with a research group to extract meaningful insights from collected mouse breast cancer data, contributing to their analysis efforts.
- Leveraged Knowledge in Python, Numpy, Pandas, Java, HTML, Tailwind CSS, Node JS, React JS, Django, Rest API, Machine Learning

Software Engineer   **EB Pearls Pvt. Ltd.**   **Aug 2020 - Aug 2021**
Helps to develop and provide consultant to customers (*https://ebpearls.com.au/*)
- Designed of the mobile part for the 'Halo' local crowdfunding initiative, impacting more than 5000 beneficiaries by establishing the mechanism of donation from donors to needy individuals' accounts.
- Refactored Android legacy codes to industry-standard practices, reducing feature upgrade time by more than half.
- Optimized heatmap view for a million test users within the Intro Dating App using Google Map SDK.
- Leveraged Knowledge in Java, Kotlin, Android SDK, JUnit, Espresso, DI, Rest API, AWS S3, Firebase, Caching, Jira, C++, Google Map

Software Engineer   **Rooster Logic Pvt. Ltd.**   **Nov 2017 - June 2020**
- Resolved 20 issues in the Sukarmi Mobile App, leading to a threefold reduction in survey completion time per user.
- Created an issue tracking system using Android Development and Node JS server for rainwater harvesting plants for households, resulting in a 80% reduction in issue resolve time.
- Leveraged Knowledge in Java, Android SDK, Node JS, JavaScript, Firebase, Gradle, Unit Testing, Rest API, Project Management

PROJECTS

Personal Website: *https://kisanthapa.github.io/* (for additional information and projects)
CausalPath Newt Web Server (*https://causalpath.cs.umb.edu/*): Interactive visualization tool for biological pathways
- Substituted the conventional Cytoscape.js library with the robust Newt library to render pathway graphs, subsequently enhancing rendering speed and enabling seamless interactivity.
- Utilized: JavaScript, HTML, CSS, Node JS, Git, Chrome Dev Tools

Molecular Communication
- Enhanced project performance by implementing Java multithreading, resulting in a substantial reduction in runtime by refactoring the project to incorporate efficient multithreading techniques.

Gene Mutation Classification
- Build a classifier utilizing TCGA to distinguish between mutated and non-mutated genes, resulting an accuracy rate of approx 92%.
- Utilized: Python, Tensorflow, Jupyter Notebook, Numpy, Pandas, scikit-learn, Google Colab

Connect (a Chat Application)
- Developed a real-time Android chat application using Java and Firebase, enabling users to engage in one-to-one or group conversations with friends.
- Utilized: Java, Gradle, Android Studio, Firebase, Rest API, Kotlin, XML

SKILLS

Software: *(proficient)*: Python, Java, Kotlin, JavaScript, Git, npm, Machine Learning, Deep Learning, Android App Development, Rest API
(good at): Node JS, React JS, C, C++, SQL, HTML/CSS, Pandas, Numpy, Django, Tensorflow, OpenCV, TypeScript