Naresh Kumar Kaushal

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Work Experience

Center For Mind And Brain (CMB) Link — Davis, California
Graduate Student Researcher | *Python · Signal Processing · Machine Learning · Speech Anatomy* — April 2023 – Present

- Leading ongoing research at Center For Mind And Brain to develop a non-invasive multimodal silent speech interface (SSI) using sEMG signals for patients with Dyarthria.
- Executed a multimodal strategy involving sEMG signals, audio, and video to proficiently cluster 39 phonemes, yielding promising initial results with an approximate accuracy of 85%.
- Conducted extensive literature review in SSI to uncover challenges and opportunities. Exploring self-supervised techniques for label-free learning and direct sEMG-to-voice conversion, preserving prosody and essential features.

WOAS Technology Pvt. Ltd. (Wooqer) — Bangalore, India
Associate Product Engineer | *Java · Spring Framework · JavaScript · CSS · MySQL · HTML* — Jun 2021 – Apr 2022

- Spearheaded the project to design an interactive gallery with the feature of providing contextual feedback on images and sending context-based notifications.
- Improved customer engagement by 45% through the implementation of new visual merchandising features in the gallery, benefiting Lenskart and other retail stores.
- Revamped Wooqer mobile app (Android and iOS) as a back-end developer by designing new APIs and optimizing existing ones. This effort led to a marked increase in app responsiveness and efficiency, resulting in a notable 25% reduction in critical response times.
- Resolved product-related errors faced by customers in collaboration with the customer success and quality assurance teams.

Planful (Host Analytics) — Telangana, India
Software Developer Engineer - 1 Intern | *C# · MySQL · Git · Object Oriented Programming* — June 2020 – Dec 2020

- Created a data quality assessment tool to identify anomalies in financial data, assign quality scores, and offer valuable insights and predictions to customers.
- Utilized the tool to detect sparse datasets, significant fluctuations, and inconsistent values, leading to a 40% reduction in data-related errors and improved predictive model accuracy.
- Collaborated on debugging and testing initiatives, swiftly resolving pending issues on JIRA, documenting code, and providing guidance to onboard new team members.

Technical Skills

Programming Languages: C++, Python, Java, JavaScript
Database and Web Development: React, HTML, CSS, MySQL, Spring Framework, Postman, REST API's
Others: Git, Keras, PyTorch, Tensorflow, Signal processing, Machine Learning

Education

University of California, Davis (UC Davis) — Davis, California
Master of Science in Computer Science **GPA: 3.9/4** — Sept 2022 – May 2024

Indian Institute Of Technology Goa (IIT GOA) — Goa, India
Bachelor of Technology in Computer Science and Engineering **GPA: 9.17/10** — Aug 2017 – May 2021
(Institute Bronze Medalist)

Projects

Omdena real world AI Project Link *Python · Tensorflow · Audio Processing · Deep Learning* — Nov 2021 - Jan 2022

- Collaborated with Consenz and 40 global contributors in the Omdena AI challenge, enhancing driver voice assistance to reduce road accidents.
- Led pre-processing team, developing a U-Net or Convolutional Autoencoder (with skip connections) model to enhance speech quality for driver voice assistance.
- Achieved a word error rate of 0.33 by denoising low SNR audio files and improved overall speech quality.

Feature Selection using deep learning (Btech Thesis) Link *Python · Tensorflow* — Jan 2021 - May 2021

- Developed a supervised model for classifying High Dimension Low Sample Size (HDLSS) cancer data using mRNA-Seq gene expression values of patients with different molecular subtypes.
- Applied Boosting, greedy feature selection, PCA, and Deep Neural Networks (DNN) to overcome the challenges of high variance and overfitting in HDLSS data.
- Achieved an accuracy of approximately 90%.