# Amrish Naranappa

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## EDUCATION

**North Carolina State University**                                          **Aug. 2022 – Dec. 2025**
*Bachelor of Science in Computer Science (AI Concentration), Minor in Statistics | GPA:3.81/4.0*                    *Raleigh, North Carolina*

## RELEVANT COURSEWORK

- Data Structures
- Database Management
- C and Software Tools
- Operating Systems
- Software Engineering
- Artificial Intelligence
- Machine Learning

## TECHNICAL SKILLS

**Languages**: Java, Python, SQL, C, R, PHP, HTML/CSS, Linux, JavaScript
**Databases**: MySQL, MongoDB, PostgreSQL, PlanetScale
**Developer Tools**: Git, Jenkins, Postman, Google Cloud Console, Docker, Kubernetes, AWS, Jira
**Frameworks**: SpringBoot, JUnit, Mongoose, Flask, Hibernate, Dash (Plotly.js), Node.js, React
**Libraries**: Vosk, Wav2Vec2, PyTorch, JWT, Prophet, Transformers(Whisper),

## EXPERIENCE

**Sourashtra Assocation Inc.**                                          **July 2025 – Present**
*AI Developer*                                                        *Raleigh, North Carolina*
- Led a team to prototype 4 **ASR** models (Whisper, Vosk, Wav2Vec2, Google STT) for English audio, establishing Tamil/Hindi support.
- Built a benchmarking framework showing Whisper's 95% transcription accuracy, achieving a 36% reduction in **WER** over other models.
- Curated Tamil datasets from Mozilla Common Voice to normalize data, resample audio and build training/evaluation splits.
- Fine-tuned Whisper(**Transformers**) for low resource dialect Sourashtra BPE tokens and Trainer pipelines, improving workflow efficiency.

**Medullus Systems**                                          **June 2024 – Sep. 2024**
*Software Engineer Intern*                                          *Durham, North Carolina*
- Built a **PHP** based reporting page using CodeIgniter MVC and **MySQL** to generate active project metrics and project completion.
- Designed pie charts and one-line summaries allowing stakeholders to track status and trends across 200+ projects in real time.
- Enhanced MARS(Medullus Advanced Reporting System) using **jQuery** to implement DataTables with inline editing and DOM updates.
- Created separate controllers with AJAX endpoints to show updated toggled project status (active/historical) and live toast notifications.
- Implemented client-side required field checks and regex validation, plus server-side username uniqueness checks.

**Visual Experience Lab**                                          **Jan. 2024 – Aug. 2024**
*Machine Learning Intern*                                          *Raleigh, North Carolina*
- Interacted with the Tobii.Interaction API to configure sensors for real-time motion and gaze tracking data retrieval.
- Implemented sensor fusion algorithms in **R** combining data from Tobii and Kinect sensors using Kalman filters, random forest classifiers, neural networks, time-weighted series, and 3D prediction models to reduce positional errors by 30%.

## PROJECTS

**E. coli Fermentation Analytics** | *Power BI, Python, Dash, Docker, AWS(ECR, EC2, RDS, S3)*                    **Aug. 2025 - June 2025**
- Visualized 300L E.coli batch fermentation KPIs for 21 batches at the NCSU Biomanufacturing Training and Education Center.
- Made a **Plotly** Dash app to show Power BI snapshots alongside forecast summaries, containerized via **Dockerfile** and Docker Compose.
- Forecasted key metrics with **Prophet**, covering aggregate metrics like Batches per year plus time-series metrics such as Aeration.
- Built **ETL** pipelines (pandas, psycopg2, SQLAlchemy) to load CSVs into PostgreSQL, update KPI tables, and write five-period forecasts.
- Deployed on **AWS** using ECR for private Docker registry, EC2 t2.micro, and Amazon RDS PostgreSQL for scalable, backed-up storage.

**Wolf Cafe System** | *Java, React, SpringBoot, Hibernate, MySQL, JDBC, JWT*                    **Aug. 2024 - Oct. 2024**
- Helped in making a **React** front end for recipe management with interactive forms and drop down menus, integrating API calls via Axios.
- Developed **Spring** Boot RESTful APIs for CRUD operations on recipes, inventory, orders, ingredients and sales tax.
- Used **JWT**-based role authentication to have secure access controls for Admin, Staff, and Customer roles, supporting data privacy.
- Established CI/CD pipelines using **Github** and **Jenkins**, streamlining Maven build processes, unit test runs, and daily reporting.

**Student Careers Dashboard** | *Python, Flask, SQL, SSH, SQL Alchemy, PlanetScale*                    **Jan. 2024**
- Developed a web application for NCSU student job positions, creating forms with AJAX validation and **reCAPTCHA** v2 honeypots.
- Used **SSH** tunneling and environmental variables for secure SSL connection between app and PlanetScale-hosted database.
- Integrated email contact forms via Flask-Mail and file link upload features, enhancing user interaction and data submission processes.

**Speech Recognition AI** | *Python, Google Speech-to-Text API, Wolfram Alpha API, pyttsx3*                    **Aug. 2023**
- Built an simple AI leveraging Google's Speech-to-Text API and **pyttsx3** library for accurate microphone-based voice recognition.
- Implemented command parsing algorithms for interpreting voice commands, conducting web searches, and taking notes.
- Utilized the Wolfram Alpha API to send queries to tutoring application and process **XML/JSON** response pods/subpods efficiently.

## EXTRACURRICULARS

**Bionics Club**                                          **Sep. 2022 - Feb. 2023**
*Software Team Member*                                          *North Carolina State University*
- Improved prosthetic leg prototypes with **Linux**, Bash, Python, and GitHub, gaining experience in control theory.