

# Bhaskar Das

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Software engineering student with foundations in **systems programming**, **Operating Systems concepts**, and networked application development. Skilled in **C/C++**, **Python**, **Java**, **Linux**, and **scripting**, with hands-on experience in building, testing, and integrating systems, applications, algorithms and data analytics pipelines.

## EDUCATION

**Concordia University, Montreal** | Full-time Student  
*Bachelor of Engineering in Software Engineering*

Expected Graduation: May. 2027

**Relevant Coursework:** Software Architecture and Design, Operating Systems, Database Systems, Computer Networks

## EXPERIENCE

- Reliance Jio Ltd. - Software Engineering Intern (Signal Processing/AI)** May. 2024 – Jul. 2024
- Engineered a **custom audio diarization algorithm** in **Python** using **MFCC extraction** and **sliding window buffers** accelerated with **CUDA**
  - Segment and identify speakers, improving real-time reliability for large-scale conferencing applications
  - Integrated **OpenAI Whisper** for segment-wise captioning and transcription, enabling 98% accuracy and fault-tolerant speech-to-text processing
  - Voice detection module using **WebRTC VAD** with duration/amplitude-based filtering

## PROJECTS

### ShareCycle – Software Developer [<https://github.com/das-bhaskar/ShareCycle>]

- Built a scalable bike-sharing backend supporting rentals, real-time availability, and station rebalancing using **Java/Spring Boot**
- Implemented **REST APIs** with secure authentication & encryption using layered architecture and design patterns
- Designed MySQL persistence with **Docker Compose** for reproducible environments and data integrity
- Wrote **unit** and **integration tests (JUnit)** for service and controller layers for frontend compatibility

### Mudic – AI-Powered Wellness App I (iOS + Flask + Google Gemini) [<https://github.com/das-bhaskar/Mudic>]

- Developed **iOS frontend in SwiftUI** with dynamic pastel theming and **mood-based real-time UI updates**
- Built **Flask backend with REST APIs** and lightweight data persistence; tunneled via Ngrok for mobile integration
- Integrated **Google Gemini API** for **NLP**-driven mood analysis, personalized messages, haikus, and interactive vent/joke responses

### Technical Experiments (C, C++)

- Developed **client-server applications in C/C++**, implementing **TCP/IP** sockets and protocol handling for reliable data transfer
- Experimented with **Nintendo DS development**, capturing input and sending data to a local **API** for learning
- Created Nintendo DS **setup tutorial** for macOS, synthesizing knowledge from forums and documentation to **guide others** in using libnds [<https://www.youtube.com/watch?v=raMW6wLBUBc>]
- Developed a **Linux command-line wrapper** for **NordVPN** commands

## SKILLS

**Programming Languages:** Java, C, C++, Python, Swift, HTML/CSS, JavaScript

**Frameworks and Libraries:** Spring, Spring Boot, Flask, React, Typescript, Node.js, Streamlit, Android (Java), iOS (Swift)

**Database & Cloud:** PostgreSQL, MySQL, NoSQL, Supabase, Firebase, Cloud Infrastructure

**Development & DevOps:** Git, Docker, Bash, Vim, GCC, CI/CD | Linux (Debian/Ubuntu), GitHub Projects (Kanban)

**Core Competencies:** Agile Software Development, Object-Oriented Design, SDLC, Design Patterns, UML, Data Structures and Algorithms, Debugging