

Mehruba Tanzid Ontika

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EDUCATION

University of Texas at Arlington

Bachelor of Science in Computer Engineering | GPA: 3.87 | Dean's List (2025)

Arlington, TX

Aug. 2024 – May 2028

EXPERIENCE

Research Assistant

Oct. 2024 – Present

UTA Biomedical Engineering Department

Arlington, TX

- Configured and maintained nnUNetv2 environment for high-performance biomedical image segmentation, ensuring seamless integration with CUDA for real-time GPU operations.
- Prepared and validated datasets by organizing directories, converting .tif files, and automating preprocessing with advanced filtering techniques.
- Executed 3D deep learning model training, optimized hyperparameters, and validated results to meet software quality and reproducibility standards.
- Collaborated with engineers and researchers on simulation-based software systems, including VCDNet for Light Field analysis and 3DeeCellTracker for real-time cellular tracking.

Library Front Desk Student Assistant

Jan. 2025 – Present

UTA Libraries Community Engagement Services

Arlington, TX

- Provided first-point-of-contact support by greeting guests, answering questions, and directing visitors to appropriate academic and technical resources.
- Managed front desk operations, including phone/email inquiries, mail processing, and maintaining organized workspaces for smooth daily operations.
- Collaborated in a team environment to improve communication workflows and ensure consistent service delivery.

PROJECTS

BotFactory | Python, FastAPI, Google Gemini API, React, Next.js

Completed

- Architected and deployed a RESTful backend using FastAPI with asynchronous request handling, simulating real-time chatbot operations.
- Integrated Google Gemini LLM with automated pipelines for data ingestion, preprocessing, and structured knowledge base generation.
- Implemented a dynamic deployment mechanism enabling CI/CD of chatbot instances across isolated server environments.
- Developed an embeddable JavaScript visualization widget for client websites, enabling real-time user interaction and monitoring.

Event Planner | Java, Swing, SQLite

Completed

- Designed and implemented a multi-window GUI in Java Swing with visualization features for event planning and booking.
- Developed a dynamic cost calculation and booking engine simulating real-world operations, with integrated validation checks for user inputs.
- Implemented authentication with role-based access control (Manager vs. Customer) and persistent profile management using SQLite.

TECHNICAL SKILLS

Languages: C, C++, Python, Java, JavaScript, Shell, HTML/CSS, Figma

Developer Tools: Git, VS Code, PyCharm, Eclipse, nnUNet, PyTorch, FastAPI, Conda, CI/CD pipelines, simulation modeling, image preprocessing

Operating Systems: Linux (Ubuntu), macOS, Windows

Other: Microsoft Office Suite (Word, Excel, PowerPoint, Outlook, SharePoint)