Giovanni Iva Terefi

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Work Authorization: Eligible for F-1 OPT STEM employment in the U.S., no immediate sponsorship needed

EDUCATION

Stony Brook University   **August 2022 - May 2025**
Bachelor of Science in Computer Science & Applied Mathematics and Statistics   *Stony Brook, NY*
Awards: Dean's List (Fall 2022 - Spring 2023)   **GPA**: 3.29/4.00
Relevant Coursework: *Analysis of Algorithms, Functional Programming, Web Development, Systems Programming, Natural Language Processing, Data Analysis, Numerical Analysis, Operations Research, Compiler Design, Software Engineering, Computer Networking, Web Security*

EXPERIENCE

Web Genomics   **August 2023 – Present**
Software Developer   *Stony Brook, NY*
- Collaboratively developed and maintained a web application using JavaScript and D3.js to generate dynamic visualizations that illustrate the relationships between specific genes and cancer genomes.
- Utilized Observable and Plotly for data acquisition, cleaning, and visualization; created bar charts and choropleth maps with Mapbox using data sourced from the N3C dashboard, US Census API and Statistics Indonesia API.
- Engineered MapLapse, an interactive web application using Plotly.js and Mapbox-gl that enables dynamic visualization of geographic data, allowing users to animate changes across various datasets spanning multiple years and regions using a slider.

Division of Information Technology, Digital Services & Experiences   **January 2023 - Present**
Student Technologist   *Stony Brook, NY*
- Deliver real-time technical assistance to over 25,000 faculty, staff, and students via chat, e-mail, phone, and Bomgar live screen-sharing sessions, providing support across essential academic technology services including Brightspace, Respondus, Echo360, and Zoom.
- Design and lead engaging technology workshops on "Beginner Python" for more than 500 individuals, with content tailored for beginners, building foundational coding skills.
- Report, diagnose, and resolve over 1,000 technical issues through TeamDynamix, ensuring efficient and accurate solutions while enhancing user experience.
- Collaborated on development of AI-powered audio transcription tool using Python, Whisper, LLama, and PostgreSQL, enhancing educational accessibility for faculty.
- Mentor and onboard new student interns, providing guidance and leadership to cultivate skills and confidence for customer support roles.

PROJECTS

Semantic Text Analysis with Deep Learning | *Python, PyTorch, GLoVe, NLTK, scikit-learn*
- Implemented Siamese neural network with convolutional layers to measure semantic similarity between text passages, achieving 80%+ correlation with human judgments
- Engineered custom structured similarity computation layer combining multiple pooling strategies to capture different aspects of semantic meaning
- Integrated pretrained GloVe embeddings and implemented fine-tuning procedures to optimize model performance for specific semantic tasks
- Built end-to-end training pipeline including data preprocessing, model architecture, and evaluation metrics using PyTorch

Tranquil Mind | *JavaScript, React.js, Gemini*
- Designed and deployed a Chrome extension using React and Google's Gemini API, leveraging generative AI for on-demand virtual therapy.
- Developed adaptive user profiling with generative AI capabilities, enhancing chatbot responsiveness by 40% and enabling personalized interactions based on user history and preferences.
- Enhanced user experience by implementing an AI-driven chatbox interface for prompt and contextually aware responses to user queries.

Stack Overflow Clone | *JavaScript, React.js, MongoDB, Express.js, Node.js, Axios*
- Engineered a full-stack clone of Stack Overflow, implementing key functionalities such as user authentication, content management, and a comprehensive user reputation system.
- Designed to efficiently thousands of monthly and concurrent active users; includes real-time question, answer and comment updates, sophisticated searching of questions by text and tags, and robust account management functionalities.
- Designed RESTful API using Express.js and Node.js, with Axios for seamless front-to-back integration; utilized MongoDB for efficient data querying, supporting 10,000+ posts.

Community Services App | *Kotlin, Android Studio*
- Developed an Android application in Kotlin that assists users in locating nearby community services like food banks and shelters.
- Integrated dynamic mapping and database queries using Google Play Services and OkHttp3, enhancing location accuracy and reducing response time by 30%.
- Employed OkHttp3 library to handle thousands of JSON requests efficiently, providing reliable access to service information.

LEADERSHIP

Stony Brook Robotics Team   **February 2023 – Present**
GUI Subsystem Lead   *Stony Brook, NY*
- Directed the development of a Python-based, PyQt5 desktop command center and dashboard for the 2025 MATE ROV competition, ensuring seamless integration and functionality for real-time robot control and monitoring.
- Led a team of 6 engineers, mentored them on agile software development practices, enhanced team productivity by 25%, and ensured project milestones were met ahead of deadlines.
- Engineering a real-time streaming solution for ZED 2 stereo camera feeds, integrating OpenCV and WebRTC to deliver high-definition video to operator dashboards with less than 200 ms latency.
- Collaborated with the Computer Vision subsystem to facilitate object detection and autonomous operation of the underwater robot, improving its efficiency and accuracy.

SKILLS

Languages: Python, Java, Kotlin, C, C++, C#, R, HTML, CSS, JavaScript, TypeScript, Go, Haskell, MIPS, SQL, Ruby
Backend: Node.js, MongoDB, Express.js, .NET, GraphQL, MySQL, PostgreSQL, Hadoop, Flask, Django, ROS2, OpenCV, WebRTC, PLY
Frontend: React.js, Angular, NextJS, PyQt5, Axios, D3.js, Plotly, Mapbox
Machine Learning: NumPy, Pandas, PyTorch, NLTK, scikit-learn, Jupyter Notebook, Google Colab
Testing: JUnit, Jest, Criterion, Pytest
Tools: GDB, Valgrind, VS Code, Visual Studio, Android Studio, RStudio, VMware, Observable, Unix Shell, Linux, Git, Github, Docker, Kubernetes, AWS, Jenkins, GitHub Actions, Google Cloud Platform, Postman, Slack, Figma, Jira