Kostadin Devedzhiev

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Education

Stony Brook University   Stony Brook, NY | August 2018 – May 2022

Bachelor of Science in Computer Science, Applied Mathematics & Statistics
Specialization in Artificial Intelligence and Data Science
Computer Science Honors Program
GPA: 3.89 / 4.00 | Summa Cum Laude

Research Interests

Software Engineer specializing in **Natural Language Processing** and **User Interface Design**, with a passion for developing **intelligent interactive systems**. Dedicated to creating **human-inspired AI** and enhancing human-machine interaction through language, speech, and innovative interfaces.

Work and Research Experience

Software Engineer, *Stellar Cyber*   San Jose, CA | May 2022 – Present

- **Developed** the chat interface, session management, and visualization suite for the Open XDR Investigator—a generative AI cybersecurity conversational copilot—including support for multi-chart visualizations of Elasticsearch queries and aggregations driven by natural language prompts.
- **Implemented** full-duplex, bidirectional WebSocket communication between the UI and ML server, reducing average response times by **70%** through parallel data and LLM requests, and facilitating real-time progress updates.
- **Implemented, maintained, and managed** the product and user analytics framework using Mixpanel, generating detailed reports to guide UX design, optimize data storage, and uncover user behavior patterns.
- **Maintained** over **90%** test coverage on ML-powered features, reducing bug filings by **34%** year-over-year and increasing feature ownership.

NLP Research Assistant, *Stony Brook University*   Stony Brook, NY | August 2021 – May 2022

- **Designed** Recursive QA—a theoretical framework for generating formal representation annotations of natural language specifications using a guided question-answering methodology.
- **Generated** question-answer pairs on constituency parse trees and **filtered** repetitive options using affinity clustering based on Levenshtein distance.
- **Developed** an interactive full-stack web application integrating the question-answering framework, enhancing annotation quality control with features like account management, work history tracking, and graph visualizations.
- **Improved** workflow efficiency by reducing cognitive load and enhancing annotation consistency, achieving an annotator agreement rate of over **80%**, with experienced users completing annotations in as little as **25 seconds**.

Artificial Intelligence Research Assistant, *University of Hawaii at Hilo*   Hilo, HI | June 2020 – August 2020

- **Developed** a threshold estimation heuristic using IoU and F1 score metrics to optimize acceptance of real-time CNN proposals for detection and classification tasks in a UI.
- **Enhanced** a human-in-the-loop, semi-automatic image annotation tool for identifying invasive species in drone imagery, enabling progressive assistance as accuracy increased during real-time training.

Creative Electronic Media Assistant, *University of Hawaii at Hilo*   Hilo, HI | Mar 2020 – May 2020

- **Developed** a Java-based API to control a holographic fan, enabling integration with external applications.
- **Created** the website for Data Viz, a data visualization lab, showcasing media projects through videos and photos.
- **Installed** and **configured** operating systems and software, and **maintained** computers and 3D printers in labs.

Software Engineering Intern, *Vivansa*   Sofia, Bulgaria | June 2019 – August 2019

- **Enhanced** the front end of a CRM application using React to improve UI components and user experience.
- **Identified and resolved** erroneous database entries, **implemented** data cleaning procedures, and **analyzed** root causes to prevent future inconsistencies.

Teaching Experience

Teaching Assistant, *Stony Brook University*   Stony Brook, NY | August 2020 – May 2021
- **Supported** in teaching AMS 210: Applied Linear Algebra for two semesters.
- **Held** weekly office hours to support students with coursework and **graded** assignments.

Linear Algebra Grader, *University of Hawaii at Hilo*   Hilo, HI | March 2020 – May 2020
- **Graded** exams and assignments for MATH 311: Linear Algebra.
- **Provided** homework assistance to students, enhancing their understanding of linear algebra concepts.

Computer Science Grader, *University of Hawaii at Hilo*   Hilo, HI | October 2019 – December 2019
- **Evaluated** programming assignments for CS 150: Introduction to Computer Science.
- **Assisted** students with homework to improve fundamental programming principles.

Publications

P-M Binder, **Kostadin G Devedzhiev**, Alexandra T Runyan. (2020). Motional emf generated by squeezing an elliptical conducting loop. *European Journal of Physics*, European Physical Society. https://doi.org/10.1088/1361-6404/ABB066

- **Developed** an algorithm to approximate the motional EMF induced in conducting elliptical loops with a controlled error margin.

Leadership Experience

Vertically Integrated Projects Member, *Stony Brook University*   Stony Brook, NY | August 2020 – December 2021

- **Led** the Embedded ML team of three students, **conducting** hands-on learning sessions on training artificial neural networks with TensorFlow and PyTorch for mechanical engineering students.
- **Embedded** an optimized convolutional neural network (CNN) on an Arduino Nano 33 BLE Sense microcontroller for real-time gesture recognition using accelerometer data.
- **Designed** the full pipeline—from data collection and preparation to model training, conversion, and deployment—achieving comparable accuracy to existing solutions while training on fewer users and generalizing to unseen users.

Technical Skills

Fields of Expertise: Full Stack Development | Machine Learning | Data Science | NLP | Prompt Engineering | HCI

Programming Languages: Python | JavaScript | Typescript | Java

Frameworks and Databases: Angular | MongoDB | Elastic Search | FastAPI | Pandas | React | TensorFlow | PyTorch