Nathan C. Beck

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Education

Princeton University Fall 2021 – May 2025
BSE in Computer Science *Princeton, NJ*

- **GPA**: 3.60 Certificates in Statistics/Machine Learning and Applied Mathematics
- **Activities**: Residential Advisor, The Daily Princetonian Head Copy Editor and Data Editor, Quiz Bowl

Technical Skills

Languages: Python, Java, C, C#, Go, JavaScript, SQL (Postgres), R, HTML/CSS
Frameworks: React, Flask, JUnit, Django, FastAPI, Robot
Libraries: pandas, NumPy, Matplotlib, scikit-learn, PyTorch
Developer Tools: Git, Docker, VS Code, Visual Studio, Code Composer Studio, PyCharm, IntelliJ

Experience

Resideo Summer 2024
Firmware Engineer *Aurora, IL*

- Developed C functionality code for implementing a heat alarm on the company's latest low-cost fire alarm, enhancing product reliability and safety.
- Designed and implemented testing software using C# with WPF to interface with fire alarm units via RS232, streamlining the quality assurance process.
- Created automated tests for fire alarms using the Robot framework, simulating real-world conditions and improving the efficiency of testing procedures through automated takeover commands.

Ticket Wallet Summer 2023
Software Engineer *Princeton, NJ*

- Worked with a team of five mobile developers, employing Git and Jira for version control and project management to enhance collaboration and streamline the development process.
- Authored 70% of the codebase for a user-responsive mobile application frontend using Flutter, based on Figma designs, to create a highly interactive and visually appealing user interface.
- Developed a robust backend using PostgreSQL and Django Rest Framework with REST APIs, to ensure reliable data management and seamless integration of frontend and backend functionalities.

Princeton University Aug 2022 – May 2023
COS126 Lab TA *Princeton, NJ*

- Assisted over 40 students weekly in debugging their Java code for programming assignments to enhance their coding proficiency and problem-solving skills.
- Provided guidance in Java programming theory to help students solidify their understanding and application of key concepts.
- Collaborated with fellow teaching assistants to identify and prepare for common errors, ensuring more effective and efficient student support.

Projects

Bootstrapping CNNs to Classify Sleep Stages | *Python, Keras, TensorFlow* Spring 2024

- Designed and implemented a convolutional neural network to automatically label sleep stages of Sleep-EDF database with Keras and Tensorflow, achieving 80% validation accuracy.

Crossword Solver | *Python* Spring 2024

- Used natural language processing techniques such as cosine similarity combined with OpenAI's GPT-3.5 API to automatically solve New York Times Mini crossword puzzles.

Princeton Art Museum App | *Flutter, Flask, PostgreSQL, AWS* Fall 2023

- Collaborated with a five-member team to design and deploy a mobile app for Princeton's Art Museum, integrating front-end development with Flutter and backend technologies including Flask and PostgreSQL on AWS.

Voice Cloning | *Python* Fall 2021

- Led a voice cloning project using Python and machine learning technologies such as NVIDIA's Tacotron2 and Waveglow, processing over 100 voice clips on Princeton's computing clusters for model training.