Andrei Biswas

Musically Enthused Computer Engineer

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Career Objective

To contribute my knowledge of Computer Engineering principles and gain valuable experience through experiential learning. Available from **January to August 2020**.

Education

BS in Computer Engineering (Honors Program) with Minor in Music & Technology — *Aug. 2016 - May 2021*

Rochester Institute of Technology — *Rochester, New York*

- **Cumulative GPA:** 3.64/4.00 | **Computer Engineering GPA:** 3.82/4.00
- **Awards:** *RIT Founders Scholarship for International Students; Dean's List (Fall 2016, Spring & Fall 2017, Spring & Fall 2018)*

Experience

Emerging Technology Intern — *January 2019 - Present*

Retail Business Services at Ahold Delhaize — *Mooresville, North Carolina*

- Researched, architected, and implemented a combination of new and existing technologies for an end-to-end frictionless experience for the user in next-gen grocery stores.
- Lead exploratory work in automating Bluetooth connections using software.
- Implemented computer vision for facial recognition and integrated with hardware.
- Maintained vendor relations to correlate business value and development process.
- Collaborated with teams in different disciplines on various projects.
- Worked in an Agile environment and attended daily stand-ups, sprint retrospectives, and backlog refinement meetings.
- Tracked project issues using Jira and maintained code using Git.

Grader for Digital Systems Design II — *Aug. 2018 - Dec. 2018*

Computer Engineering Department at RIT — *Rochester, New York*

- Checked, corrected and helped with homework and quizzes for the students taking the class.

Undergraduate Research Assistant — *May 2017 - Aug. 2018*

Mechanical Engineering Department at RIT — *Rochester, New York*

- Developed a 50% faster and more accurate real-time monitoring system with a partner which analyzes sounds produced by different machining processes and labels them according to a classifier created by a support vector machine algorithm.

Projects

- A network-attached storage system using **Python** with a hard drive and a **Raspberry Pi** that backs up all files in real time in Google Drive.
- An application in **Python** that uses **Google Cloud Vision** and Edamam **REST API**s to provide recipes from pictures of ingredients. The user can browse and filter results based on calories and nutrient ranges.
- A command-line dictionary using **Shell** and WordsAPI **REST API** that can fetch the definition, part of speech, synonyms, antonyms, and an example of one word or multiple words.
- An alarm clock system using **Python** and a **Raspberry Pi** that shows a fun fact about the day when the alarm rings. The alarm is a random track from a provided YouTube playlist link or a YouTube video link.
- An **Augmented Reality Android app** for this resume using **Unity, Vuforia, and C#** scripts. Upon scanning the QR code in this resume with the app, it will overlay the album art and snippets of audio for all the tracks that I have composed.
- An **Android app** in **Kotlin and Java** that tracks scans from a barcode scanner. Within the app, a QR code is scanned and it pairs the devices using **Bluetooth** technology.
- A frictionless, **computer vision**-based entry system for a grocery store using **Python, OpenCV, Microsoft Azure, a Raspberry Pi, and a NVIDIA Jetson Nano**.

All projects have been maintained using **Git**. More on `codeabiswas.github.io`.

Skills

Programming	Python, Kotlin, Java, Shell, ARM Assembly, C, C#, VHDL, HTML, CSS, JavaScript
Software	Altera Quartus, ModelSim, OrCAD PSPICE, Xilinx ISE, Android Studio, Unity
Hardware	Oscilloscope, Digital Multimeter, Waveform Generator, Raspberry Pi, Nvidia Jetson Nano, NXP FRDM-KL46Z, Digilent Nexys 3 Spartan-6
Languages	Fluent in English, Bengali, French, Hindi

Extracurricular Activity

President; Vice President — *Aug. 2018 - Dec. 2018; Aug. 2017 - May 2018*

Audio Engineering Society (AES) — *Rochester, New York*

- Held weekly meetings to discuss, implement, and experiment on recording techniques, track analysis, room treatment, and Digital Audio Workstations.
- Taught other piano players how to do simple improvisation and capture sound from an acoustic piano.

Volunteer Teacher — *Aug. 2015*

DASTAK — *New Delhi, India*

- Taught the English language to girls who were in grade 10 whose mother tongue is Hindi.