NACHIKETA GARGI

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EDUCATION

University of Michigan Class of 2022
B.S.E. in Computer Science (expected)
B.F.A. in Performing Arts Technology (expected)

Relevant Coursework: EECS 280, MATH 116
Clubs and Organizations: UM::Autonomy, MIDAS Music Theory

WORK EXPERIENCE

MIDAS Music Theory - `midasmusictheory.org` Sep 2018 - Present
Research Assistant
- Member of the MIDAS project "A Computational Study of Patterned Melodic Structures Across Musical Cultures" being carried out at the University of Michigan.
- Working on developing a method to transcribe a corpus of Indian music compositions automatically.

YouSound - `yousound.com` Jun 2017 - Sep 2018
Full Stack Developer
- Created a scaleable chat platform to accompany the rest of the site using Node and socket.io, deployed on AWS.
- Researched and documented setup instructions and assisted in implementation for a web-scale video live-streaming platform (like twitch.tv) using AWS Elemental MediaLive, MediaPackage, and CloudFront.

Primity Bio - `primitybio.com` Jun 2016 - Sep 2016
Software Engineering Intern
- Worked on a web-based realtime, collaborative data analysis platform for clients using test-based development with Node, Angular, and MongoDB.
- This work was presented at an FDA conference in Washington, D.C.

PROJECTS AND PUBLICATIONS

ISMIR 2018 Jun 2018 - Sep 2018
Adversarial Reinforcement Learning for Music Generation Python, Keras, LaTeX
Paper describing my findings when experimenting with various methods of music generation was accepted in the Late-Breaking Demos session at ISMIR 2018. Available on ISMIR's website.

FieldAC Jan 2018 - Apr 2018
FRC Robot and Object Localization C++, OpenCV, Darknet
As part of FRC team, trained a custom model for an object detection framework (YOLOv3) on game pieces. Created field model that used optical flow in conjunction with YOLOv3, onboard LiDAR, and IMU to estimate pose of robot and game pieces on the field. Model was used for an autonomous routine to manipulate the nearest game piece.

AutoMuse Oct 2014 - June 2016
Automated computer music composition Python, Keras
Used markov chains and LSTM neural networks to generate music from a dataset of scraped MIDI files.

SKILLS

Programming Languages	JS, Python, Go, Bash, C++, Java, Max/MSP
Creative Software	Ableton Live, After Effects, Photoshop, Logic
Other	Git, AWS, GCP, Slack, Trello