Ada Toydemir

University of Southern California
Computer Science B.S. GPA 3.5
Computer Science M.S. Ex. 5.23

Skills

Languages: C++, C, Javascript, Python, GLSL, Java, Swift, Tensorflow, Caffe, SQL, Supercollider, Turkish (native)
Programs: Unreal Engine, Unity, Adobe Suite, TouchDesigner, Houdini, Vim, FL Studio
Subjects: Graphics Pipeline, Machine Learning, Computer Vision, Digital Signal Processing, Game Development Audio Visualization, Natural Language Processing, Web Development, Software Engineering, Algorithms
Misc: Git, Perforce, Sound Design, Music Production, Classical Piano, Jazz Piano

Work Experience

Tech Artist | Blindsight, USC Games AGP — Jan 2023 - Current
- Working with a team of 60 students to develop a fighting game with a blind main character
- Building the main visual elements using Unity: a custom manga-like shader with an echolocation lighting system

Assistant Lab Director | Ahmanson Lab, USC Polymathic Maker Space — Aug 2021 - Jan 2023
- Administered projects involving 3D printing, robotics, webVR, computer graphics, and IT
- Designed and lead workshops on computer graphics and digital signal processing
- Tech consultation for professors, and tutoring for students

Web Development Intern | Encore, Music Performance and Audience Interaction App — Jan 2022 - May 2022
- Engineered a custom landing page for musician Kid Cudi's app with a team of 7 interns
- Utilized React and Typescript to implement fast search queries, realtime media playback, and deep links

Research Assistant | USC Dornsife: College of Letters, Arts, and Sciences — Aug 2020 - Aug 2021
- Analyzed protest trends using newspaper archives and natural language processing techniques
- Compared search algorithms, word embeddings, and neural networks

Intro CS Course Producer | USC Viterbi School of Engineering — Jan 2020 - Jan 2021
- Responsible for grading, proctoring, designing, and answering C++ programming questions
- Taught a class of 20 students and held weekly office hours

Research Assistant | U of U Scientific Computing And Imaging Institute — Aug 2017 - May 2020
- Developed a multi-source texture synthesis algorithm for radioisotope image segmentation and classification
- Employed various neural networks and ensemble learning methods for texture analysis

Ski Instructor | Brighton Ski Resort — Feb 2015 - May 2016
- Taught skiing and safety to kids ages 3-8

Project Leadership

USC CoCa President: Art + Tech Club — Dec 2018 - Current
- Responsible for directing recruiting, social and professional events for a 40-student organization
- Semesterly collaborative project showcase with themed works ranging VR, Data Visualization, AI, and 3D printing
- My current project is a gaze tracking shader showing balance in composition using Javascript and webGL

Music Visualization Research — April 2021 - May 2022
- Implemented a survey of music visualization and real-time graphics techniques to create music videos and visuals
- Compared methods using webGL, webXR, ThreeJS, p5, VVVV, touchDesigner, and pygame

Neural Re-Synthesis Research Group — Aug 2019 - May 2020
- Lead a team of 5 students to design a hardware digital synthesizer that recreates input sounds
- Used JUCE and Maximilian for digital signal processing; Dlib and Scipy for optimization; Raspberry Pi for hardware

Sound Generation — Jan 2020 - May 2020
- Mentored a team to recreate Google's NSynth: a neural network that produces unique samples from multiple sounds
- Taught sound analysis techniques, encoder-decoder models, and recurrent neural networks using Python and Keras

Publications

[1] C. Ly, C. A. Nizinski, A. Toydemir, C. Vachet, L. W. McDonald, and T. Tasdizen, "Determining the Composition of a Mixed Material with Synthetic Data," Microscopy and Microanalysis, pp. 1–11, 2021.

[2] E. Erturk, Y. U. Ciftci, A. Toydemir, P. Ahmandipour, Y. Yin, and M. Soleymani, "Sensitivity of Multimodal Representation Learning Frameworks for Different Input Representations," (Manuscript in Preparation)

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