YUXUAN MEI

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EDUCATION

B.S. Computer Science, Columbia University in the City of New York, GPA 4.06/4.33, Expected May 2019.

RESEARCH INTERESTS

I'm broadly interested in physically based computer graphics and animation. I have an ambitious objective: to simulate everything in this world, including chemistry processes, mechanical experiments, and industrial design and testing. I hope to understand this problem space, whether there is structure to it, what the common challenges are, and go from restricted scenarios to more general cases. Currently this seems to be impossible, as the real world is beyond just complex, and some phenomena are not well understood in physics. I'm also aware that PhD studies require one to go narrow into a field. Taking this into account, I hope to work on some specific problems in the field of graphics, and try to see if I can generalize theory from one type of problems and transfer to another.

HONORS & AWARDS

Dean's List, Columbia University in the City of New York, 2015 - 2018.

Google Intern Travel Grant for Grace Hopper Celebration, 2017.

SelfScore Scholarship for International Students, 2017.

RESEARCH EXPERIENCE

Supervised by Professor Changxi Zheng, Sep 2018 - Present.

Under the direction of Professor Zheng and one of his PhD students, I'm currently working on the audio watermark removal problem. My teammate and I first wrote Python scripts to download watermarked audio data from stock music websites so that we could better understand the actual problem. We tried to use commercial audio processing software and existing denoising models to remove the watermark after we got a rough estimate by averaging audio data, but the results turned out to be unsatisfying. We now have turned to learning based methods and hope to train a neural network that can perform the task of audio-watermark decomposition with generated training data.

Supervised by Professor Steven Feiner, Sep 2017 - Dec 2017.

Under the direction of Professor Feiner and three other researchers in the CGUI lab, I assisted with exploring different foliage visualizations in Unity and wrote documentation for those who would continue to work on this project. Different methods were experimented: native Unity trees and particle systems, cloth simulation package ObiCloth with custom calligraphy materials, procedural ivy generation package RealIvy, among others. To achieve some specific effects, I modified the RealIvy source scripts to include new functionalities such as switching between different leaf textures.

Supervised by Professor Douglas Almond and Professor Shuang Zhang, Sep 2016 - Jan 2017.

Under the direction of Professor Almond in Columbia's Economics Department and Professor Zhang from University of Colorado Boulder, I assisted with obtaining pollution monitoring data from official websites of environmental protection departments of some Chinese provinces. We were interested in understanding the change in pollution emission after a new emission standard came into effect and what kind of economic implications it has. I wrote Python scripts (requests and selenium packages) to crawl static and dynamic web pages with redis for job scheduling, and cleaned the data to CSV files and SQLite databases for further statistical analysis.

TEACHING EXPERIENCE

Columbia University in the City of New York

As a teaching assistant, I work with professors to ensure the class operates smoothly, help students with questions during office hours and on Piazza, and occasionally improve starter code, enhance documentation and writeups, and lead recitations.

COMS W1004 Introduction to Computer Science in Java: Fall 2016, Spring 2017, Fall 2017, Spring 2018, course assistant; Fall 2018, head teaching assistant for Professor Adam Cannon.

COMS W4160 Computer Graphics: Spring 2018, teaching assistant for Professor Changxi Zheng.

COMS W4167 Computer Animation: Fall 2018, teaching assistant for Professor Eitan Grinspun.

Private Tutoring

Tutored Python and Java for a number of students as a tutor listed at the CS department at Columbia, 2016 - 2017.

Devised and taught an introductory Java course for two high school freshmen, Summer 2016.

Tutored math for a middle school student, 2015 - 2016.

WORK EXPERIENCE

Software Engineering Intern at Google, New York, NY, May 2018 - Aug 2018.

- Designed and implemented a FlumeJava pipeline to process front end activity logs to generate an activity graph;
- Refactored an internal tool and incorporated the activity sequence visualization into the tool;
- Reviewed internal use cases with UX, PM, and other SWE teams to improve the pipeline, documented the general usage, and familiarized other teams with example use cases.

Engineering Practicum Intern at Google, Los Angeles, CA, May 2017 - Aug 2017.

- Created an overview page in Keyword Planner that displays forecast data using Angular Dart and Sass;
- Created a data service on the front end server to serve data for the overview cards using Java;
- Implemented a backend API to support location-based forecast data for the data service using Java;
- Collaborated with another Google team to coordinate sharing components and styles with our project.

Programming Intern at Yik Data Analytics, Nanjing, China, May 2016 - Aug 2016.

- Under the guidance of Professor Qiao Wang at Southeast University, researched on line simplification algorithms and approximation theory, and implemented some algorithms;
- Processed and stored OpenStreetMap data in SQLite databases using Python, and resented a plan of map simplification program to colleagues.

EXTRACURRICULAR EXPERIENCE

Columbia Womxn in Computer Science, 2016 - Present.

- Connect with corporate sponsors to fund events and send women to conferences like Grace Hopper Celebration;
- Plan community events for students (including the first diversity hackathon at Columbia), and work with companies to plan events such as tech talks and recruiting sessions.

Illustrator for Columbia Science Review, 2015 - 2017.

- Illustrated for club publications to promote science; topics include quantum computing and cryptography.

Webmaster for Columbia Blue Glaze Theatre, 2016.

ADDITIONAL INFORMATION

Languages: Mandarin (native speaker), English (fluent), Japanese (intermediate), Korean (beginner).

Programming Languages: Python, Java, C/C++/C#, Dart, HTML/CSS/Javascript, MATLAB, SQL.

Softwares/Technologies: postgresql, sqlite3, PyTorch, git, LaTeX, Unity, OpenGL, FlumeJava.

Other Interests: chemistry, teaching, singing, walking, drawing, cooking.

The beautiful template for this CV credits to Jason R. Blevins.

REFERENCES

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