Hanlai Chen

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SKILLS:

Programming skills:

- Proficient in programming languages like C, C++, C#, Python, Java, JavaScript
- Familiar with SQL and NoSQL database
- Experience with OpenCV, PyTorch, and TensorFlow, OpenGL
- Work with all operating system, Linux/Windows/macOS
- Experience with Bash and PowerShell

Other skills:

- Attention to detail, self-discipline and responsible
- Creative, motivating, flexible, and have strong problem-solving skill.

EXPERIENCE:

Web Development:

Pokémon Trainer Website:

- The website was developed with JavaScript, React, NodeJS, JSON, and MongoDB, and deployed by Heroku.
- Developed APIs for database access, user management and admin control panel.
- Proposed pre-project analysis and technical assessments and developed website with user-friendly interface and a variety of functionalities with Pokémon theme.
- GitHub Repo: *https://github.com/michael2221807/csc309-project*

Website for the disability community (knowark.ca):

- The website was developed with JavaScript, React, NodeJS, DynamoDB, and multiple AWS infrastructures.
- Collaborated with our partner and develop a platform that provide supports for the disability community.
- The website was deployed by AWS Beanstalk and hosted by AWS ec2 server instance with Route 53 DNS and Elastic load balancer.
- Created customize CICD pipeline on GitHub for auto deployment to AWS Beanstalk.
- Implemented database level password encryption, and setup HTTPS for the website.
- Set up AWS site monitoring, and auto-scaling.
- Implemented on-site searching with AWS Elasticsearch API.

Unity Development:

- Built 3D hyper-casual game with Unity, and C# programming language.
- Used binary encapsulation to serialize data.
- Created scene by procedurally generation algorithm.
- Created distinctive and appealing games by devising Minimalism and fresh art along with novel and innovated gameplay.
- Game Demo: *https://michael2221807.github.io/CrazyStack.html*

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Computer Vision Development:

Real-time Social Distance Detector

- Developed frontend and backend for a pedestrians detector with python based on Yolov4 32 layers model.
- Created program to classify and filter training data, i.e., Filter training image by desired number of pedestrians and proper filming angle.
- The model Achieved a mAP of 65% while maintaining high framerate to support our real-time application.
- Used Homography and other perspective transformation techniques to convert video scenes to birds-eye-view and calculate distance between every pedestrian.
- GitHub Repo: *https://github.com/michael2221807/social-distance-detector*

Android App Development:

Android Game Center (Minesweeper, Connect 4, Sliding Tiles):

- The Application and games are developed using Android Studio, Xml, Java
- The Application development strictly follows SOLID principle and implement with goals of code abstraction, stability, and reuse.
- Implement functions and interfaces with a variety of Design Patterns including Singleton and Serialization, Generic etc.
- Build unit tests for inspections and diagnostic procedures to identify bugs and optimizing application's performance.
- GitHub Repo: *https://github.com/michael2221807/csc207*

EDUCATION:

Bachelor of Science: Computer Science, University of Toronto
Computer Science Related Course GPA: 3.46/4

Relevant Coursework: Software Design, Data Structure Analysis, System Programming, Operating System, Computer Organization (focus on computer hardware knowledge), Calculus, Probability & Statistics, Algorithm Design & Analysis, Mathematical Expression and Reasoning for Computer Science, Theory of Computation, Databases, Programming on the Web, Computer Linguistics, Machine learning, Computer Networks, Image Understanding, Software Engineering, Computer Graphics, Neural Nets and Deep learning