Pierre Theo Klein

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EDUCATION

Bachelors of Arts and Science, McGill University, Montreal, QC, Canada   **Sept. 2015 – May, 2019**
- **Major:** Honours Cognitive Science, concentration in Computer Science.
- **Minor:** Computer Science

Stuyvesant High School, New York City, NY, USA   **Sept. 2012 – Jun. 2015**

AWARDS

- 1st place at McHacks 5, *McGill University*   **Feb. 2018**
- Tomlinson Engagement Award for Mentoring*, McGill University*   **Winter 2017 – Winter 2018**
- Science Undergraduate Society Executive of the Year*, McGill University*   **Winter 2018**

WORK / INTERNSHIP EXPERIENCE

Microsoft Internship, Seattle, WA   **May 2018 – July 2018**
12 week Software Engineering Internship
- Worked with Kubernetes API, Azure Cloud Services, React, and Azure Functions.
- Discussed with large-scale customers about business problems they face with the existing solutions.
- Spec-ed, architected, and built a full-stack feature on the Azure Portal to solve the business problems that the customer expressed, including decreasing latency from 7 minutes to 3 seconds.

Microsoft Intern Ambassador, McGill University   **September 2017 – Present**
- Provided an on-campus voice for student opportunities at Microsoft, including internships and full-time positions.
- Maintained a budget to sponsor various Computer Science related social and academic events.

Microsoft Internship, Vancouver, BC   **May 2017 – Aug. 2017**
16 week Software Development Engineering Internship
The Coalition Gaming Studio
- Worked with the Tools Team to improve workflow of all other teams around the studio.
- Tasks included streamlining telemetry to *Splunk* for many in-house apps, working with and updating collision statistics generators, creating insights about compilation statuses of blueprints in the Unreal Editor, and updating in-house apps to accommodate new requirements.

CSUS Helpdesk, McGill University   **Fall 2015 – Present**
Lead tutor
- Tutored for Comp. 202: Intro to Java, Comp. 250: Intro to Computer Science, Comp. 251: Data Structures and Algorithms, and Comp. 302: Functional Programming

Fabulous Fit, New York City – Fitting materials supplier   **June 2015 – Sept. 2016**
Director of Operations, Web Designer
- Hired and lead team of web and graphic designers to redesign the company website.
- Worked with Squarespace and various photo-editing tools.

LEADERSHIP EXPERIENCE / EXTRA-CURRICULARS

Hackboard, McGill University   **May 2018 – Present**
- Lead developer of 3 person team to build a MEAN stack web application which will manage hacker registration, acceptance, and sign-in, as well as provide sponsors with ability to whitelist hackers.

CSUS Helpdesk Representative, McGill University   **Fall 2017 – Present**
- Liaison between the tutoring service and the Computer Science faculty.
- Transformed the CSUS Helpdesk from a small student-run initiative to a large-scale tutoring service that has consistently provided support for students enrolled in computer science courses for free, 10AM to 5PM Mon–Fri.
- Interviewed, selected, and managed a team of 40 CS tutors.

New Residence President, McGill University   **Fall 2015 – Spring 2016**

- Represented 800 students for all discussions pertaining to New Residence Hall, including renovations, and other administrative projects.
- Oversaw budget of 12,500 CAD for students at New Residence Hall
- Contributed to planning of 32,000 CAD budget for all first–year students

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RELEVANT PERSONAL PROJECTS

F.A.C.E.: Face Analytics with Comp-vision Engineering (OpenCV, MEAN stack)   **Feb. 2018**
- 1st place at McHacks 2018: https://devpost.com/software/mchacks18
- Created a product that gathers business analytics on customers in brick and mortar stores via face tracking
- The app used DeepFace and other pre-trained models to perform face detection/classification/verification
- Saved face embedding in MongoDB and to generate unique customer ids for the face and enable matching
- Analyzed customers for demographics and also created a mapping of how they navigated through spaces

Peer-to-peer Tutoring web app (MEAN stack)   **Fall 2017 – Present**
- Innovated a tutor managing web app which lets the manager of a tutoring service create tutors, assign shifts, and update information. Link: https://helpdesk.mcgill-csus.ca/
- Fully functional API enables the viewing and updating of tutor, course, and schedule information.

Sentence Generator (JavaScript)   **Fall 2017**
- Wrote a web application that analyzes input text and generates new sentences based on user-provided keywords.
- Algorithm uses a weighted random walk to traverse the word pairs in the graph, based on the probability that a given word pair was seen in the input text. When a user provides keywords, the A* pathfinding algorithm is used.

Motorcycle wall avoidance (JavaScript)   **Spring 2017**
- Wrote vector class, 2D collision library to generate custom race tracks.
- Used a deep Q-learning library to train a simulated motorcycle to avoid user-generated walls.

ExamWise (JavaScript, Python, HTML, CSS)   **Spring 2017**
- Created website that streamlined the process for students to figure out where and when their exams are being held. The service was used over 8000 times.
- Wrote server-side scripts that scraped exam information from the web, saved them in an JSON file, and then fetched the data from the JSON when needed.

Various web games and physics simulations (JavaScript, Python)   **Winter 2016 – Spring 2017**
- Max-flow solver that uses the Ford Fulkerson algorithm and lets the user create directed, weighted graphs.
- logic gate creator which includes the ability to parse logic statements into logic gates.
- Algorithm comparison program shows the paths that DFS, BFS, and A* search in an effort to solve a randomly generated maze at the same time.
- More projects can be found at: http://cs.mcgill.ca/~pklein3/

Nature Simulator (Java)   **Summer 2016**
- Designed a simulation where animals navigate and avoid their predators, while simultaneously attacking and eating their prey. The goal was to see an evolution in their behavior as their genes were passed down and mutated.

Genetic Algorithms (JavaFX)   **Spring 2016**
- Developed an app that demonstrated the power of using genetic algorithms to find the optimal path for a car on a race track. Simulated cars had 'genes' that determined when and where they would turn. The scoring function was the Manhattan distance to the goal, and the efficiency of the path.

Electronic sign-in System (Java, Swing, mySQL)   **Fall 2015**
- Created prototype apps for 800-person dorm, which sped up sign-in and sign-out of guests, as well as the search of the data collected by the app.

SKILLS / INTERESTS
- *Familiar Software:* Unreal Engine 4, Splunk, Visual Studio, Eclipse, Sublime Text, Perforce, Git
- *Computer Languages (Alphabetical Order):* C, C#, C++, Java, JavaScript, Python
- *Spoken Languages:* Fluent in spoken and written English and French; basic Spanish
- *Interests:* Computational Linguistics, AI, HCI, big data