Henry Wang

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| Technical skills | * CAD Software: AutoCAD, SolidWorks, DipTrace, * Programming Languages: C#, C++, MatLab, PHP, Python * IDEs: Visual Studio, Eclipse (Android Development), Unity. * Operating systems: Windows and Linux… * Controllers: Raspberry Pi, Arduino, FPGA * Hands on: soldering, power tools, vertical band saw, ?? * GitHub…? * OpenCV? * Consider just classifying them all as technologies. | |  | | | |
| Qualifications | * Meticulous handling practices developed through exposure to modern surveying techniques such as differential levelling, inclined stadia, reciprocal levelling, open and closed traversing. * Proficiency in technical writing shown through detailed lab reports and designs. * Creative! * Resilience to work stress and deadline pressures developed through rigorous academic experiences and managing extra-curricular activities. * Developed adept communication and problem-solving skills in customer servicing * Works efficiently towards solutions without assistance shown through early and independent completion of assigned tasks. * Attention to detail and strong troubleshooting skills developed through peer tutoring in various courses. * Access to vehicle if required. Passive driver. * Keen attention to detail  - Superior analytical, evaluative, and problem-solving abilities  - Very effective organizational skills | |  | | | |
| Work Experience | Piano Teacher (volunteer)  Music for Kids, Ottawa, ON   * Effectively communicated with parents of students to schedule weekly appointments. * Evaluated musical excerpts before identifying mistakes and providing constructive feedback in a tactful way. * Received outstanding instructor award | | 2013 – 2014 | | | |
|  | Staff Member  University of Waterloo Food Services   * Provided support to and worked at various stations * Demonstrated team work by synergizing with other staff members to deliver customer requests in a timely manner. * Development of micro-time management skills through the multi-tasking multiple client orders. * Attention to customer requests * Demonstrated fast learning skills with capability of operating each station * Team work…and shit, cooperation * Cooking and food preparation!??! | |  | | | |
|  | Project Manager Assistant  Brook Restoration, Ottawa, ON   * Accompanied the Project Manager on routine site inspections. * Provided support to workers with onsite work (ie mobilization, concrete and swing stage work). * Researched materials, services and building codes that were required for various projects. * Developed clear and concise communication skills by effectively maintaining contact with suppliers, sub-contractors and engineers. * Demonstrated strong organizational and communication skills with the timely ordering and delivery of supplies. * Assisted with the revision of project scheduling, cost estimations, technical drawings and other documentations. * Performed other administrative duties as required. * Conducted interviews * Attended Tender Meetings * Independency… * Placed orders for items, picked up items for sites. | |  | | | |
|  | Customer Service Representative  Farm Boy Nepean, Ottawa, ON   * Exercised communication skills by responding to customer inquiries in a pleasant and professional manner. * Carefully handled and counted payments, transaction receipts, and cash. * Performed store closure procedures which required the collection, organization, and tracking of inventory. | | 2013 – 2014 | | | |
|  | Puzzle Engineer  VS Entertainment/Escape Games Canada, Toronto, ON   * Designed, programmed, built and installed Arduino based embedded systems (e.g. keypad sequencers, electromagnetic locks, and RFID readers). * Successfully upgraded escape rooms to adhere to fire safety regulations with no facility downtime to customers. * Demonstrated self-learning and problem-solving capabilities through independent research and design of new concepts, and debugging of software and hardware. ?? * Interactive Tile stuff | | May – Aug 2016 | | | |
|  | Firmware Engineering  Infinera, Ottawa, ON  Matlab, MEX API, Visual Studio, Eclipse based unit test??  Implemented FFT that improved accuracy and runtime. | |  | | | |
| Project Experience | Soils Lab  University of Waterloo, Waterloo, ON   * Performed grain size analysis of soil samples by sieving, hydrometer test and Atterberg Limits tests. * Determined individual particle sizes and the percent composition of gravel, sand, silt and clay. * Attention to instruction, partner cooperation, time management and preparation were required for the implementation of new unfamiliar methods and concepts as well as the timely delivery of project. | | 2015 | | | |
|  | Proposed Channel Crossing Design Report  University of Waterloo, Waterloo, ON   * Prepared technical report presenting details for the preliminary design of a hypothetical culvert crossing. * Conducted field surveys in groups using a Sokkia Total Station to establish coordinates of various points of interest. * Analyzed and performed calculations regarding hydraulic capacity, USGS coordinates and earthworks to achieve an optimal solution. * Produced numerous detailed and correctly scaled maps of the project site and its features using AutoCAD. | | | | | 2014 |
|  | Level Loop Survey  University of Waterloo, Waterloo, ON   * Measured elevations of various points relative to sea level with a Sokkia Total Station. * Cautiously and meticulously performed unfamiliar procedures with group members to complete assignment within deadline without damaging equipment. * Documented, calculated and scrutinized collected data. | | | | | 2014 |
|  | Green’s Creek Fieldwork Study  Colonel By Secondary School, Ottawa, ON   * Introduced to basic field work involving the investigation of fluvial characteristics   of a local tributary.   * Cooperated with other students and trip advisors to methodically collect extensive fieldwork data. * Presented calculated correlation coefficients and data analysis in a formal technical report. | | | | | 2014 |
|  | Beam Analysis MATLAB Program   * Program is capable of resolving reaction forces at supports given user input of the beam and forces acting upon it. * Uses basic numerical computation to produce and display the corresponding shear force and bending moment diagrams. * Used as educational assistance in the course Statics and Solid Mechanics | | | | | 2015 |
|  | 3D AutoCAD Model of House   * Implemented various new functions in order to produce a realistic and correctly scaled rendering of the house’s walls, doors, windows and floorplan. * Current completion of second floor interior. * Finished product will include basement, first floor, exterior and furniture. | | | | | 2015 |
|  | Tic Tac Toe Algorithm   * Console application, written in C++, implements object oriented programing, abstract data types and memory management. * Utilizes the minimax algorithm to determine best available move to ensure a draw or win for the AI. * Will incorporate the alpha-beta pruning method. | | | | |  |
|  | Alarm Clock Arduino Project   * Uses a liquid crystal display and real time clock to create an interactive alarm clock prototype. * User interface allows pre-setting of the alarm time, toggling of the alarm mode and manual termination of the alarm buzzer. | | | | |  |
|  | Remote Controlled Arduino Car   * Designed and produced 3D drafting of chassis components using SolidWorks before 3D printing and assembly. * IR receiver interfaces with the Arduino and motor shield by decoding remote control signals and executing corresponding functions. * Alternative machine state allows for a simple line following mechanism using IR emitters and photosensors. | | | | |  |
|  | 3D Tic-Tac-Toe/ Leap Motion Controller Hardware Hack   * Created at UofT Hacks * Created in Unity (C#) * Uses the Leap Motion controller * Allows for 3D interactive experience * Right hand key tap places player mark in location, left hand swipe allows for camera orbit/rotation, tapping outside * Main contribution debugging and testing of code…research of documentation, as well as * Created a 4x4x4 game of Tic-tac-toe in Unity (C#) that implements Leap Motion’s hand and gesture recognition to provide a 3D interactive user experience. * Collaborated with group members with the research, development and debugging of in-game features. | | | | |  |
|  | Pedometer Android Application, University of Waterloo   * Demonstrated leadership in guiding group members through the development of the project. * Was responsible for the delegation of tasks, and the review and maintenance of written code. * Used MATLAB to read raw sensor data, apply low-pass filters and plot graphics of data trends. * Designed and implemented a pedometer algorithm using a finite state machine to differentiate the different stages in a valid step.Applied low pass filters to eliminate noise and bias * Finite State Machine to determine validity of the step… * Prevent false positives and false negatives * Calibration function… * Demonstrated leadership in guiding group members with the development of the project * Lab component of ECE 155, source control and revision!? | | | | |  |
|  | Web Server Simulation   * Implements abstract data types, memory allocation… * Database of URI stored in a linked list * Client requests to be processed * Server processes client requests based on priority * Uses discreet event simulation | | | | |  |
|  | Interactive Game Room Research and Design, VS Entertainment   * Manufactured, assembled and wired hardware for (160 sq ft of) illuminated pressure plates. * Installed interface between Arduino Ethernet client and LAMP stack on a Pi to enable data transmission from RFID tags to database via HTTP requests. * Established I2C bus between Pi and Arduino slaves to transmit color states and pressure plates switch states. | | | | | Aug 2016 |
|  | Meme Generator   * Program allows user to load a meme * // not an appropriate use of openCV, scratch this shit | | | | | July 2016 |
|  | Super Saiyan Image Filter, Personal   * Written in C++, in Visual Studio, with the OpenCV library. * The program uses a Cascade Classifier to detect the region of interest containing the face and super imposes the modified mask image. * Allows user to save the modified image. | | | | | July 2016 |
|  | Tinder Bot   * Hack the North hardware hack. * Python script running on a Pi uses computer vision software to filter through profile pictures for specified features and uses motors to select matches for Tinder Application * Lasagne’s Neural Network’s library | | | | | Tbd |
|  | League of Legends Match Scout Script  Riot API Python Script   * Python script uses Riot’s API to fetch data on opponents and team mates. | | | | |  |
|  | Arduino 3D printer…?? Not sure if feasible lol | | | | |  |
|  | Android Chess Game Application, Personal   * Created a fully functional two player chess game, with a simple display and intuitive UI. * Exercised debugging skills and software design patterns to ensure a robust application with correct game mechanics. * Management of fragment lifecycle ensures automatic saving and restoring of previous game states. * Mention the number of downloads here. | | | | |  |
|  | English Premier League Odds Picker, Personal   * Python script extracts bookmaker odds for current week fixtures from various sports betting sites. * The program displays the average odds for each result… * Empowers user to make probabilistic decisions in managing their fantasy football team. | | | | | Aug 2016 |
|  | Android Meme Generator Application, Personal   * Allows user to generate memes by annotating template images (or photo gallery) and saves it for distribution. * Results: Lots of downloads? | | | | | Sept 2016 |
|  | Java Applet: Circuit Analysis | | | | |  |
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| Education | Candidate for Bachelor of Applied Science, Civil Engineering  University of Waterloo, Waterloo, ON | 2019 | | | | |
|  | Dean’s Honour List (Winter 2016) | | | |  | |
| award | Dean’s Honour List (Winter 2015)  Faculty of Engineering, University of Waterloo | | | |  | |
|  | Candidate for Bachelor of Applied Science, Electrical Engineering  University of Waterloo, Waterloo, ON | | | |  | |
|  | Ontario Secondary School Diploma (Honour’s Society with Distinction)  Colonel By Secondary School, Ottawa, ON | | | | 2014 | |
|  | International Baccalaureate Diploma  Colonel By Secondary School, Ottawa, ON | | | 2014 | | |
| Relevant Courses | Civil Engineering Concepts, Digital Computation, Statics and Solid Mechanics, Earth Engineering, General Electrical Engineering, Management Science | | | | |  |
| Activities and Interests | Bridges to Prosperity University of Waterloo Chapter   * Humanitarian organization that builds suspended footbridges for rural communities in LEDCs. * Member of the design sub team with contribution in writing the technical report of the project (fully detailed AutoCAD cross-sectional profile of bridge). * Introduced to safety codes and construction procedures for towers, anchors, cables and decking at travel team meetings. * Contacted local engineering companies via telephone to inquire about a potential sponsorship with B2P. | | | | | 2015 |
|  | Waterloo Engineering Competition Junior Director   * Student collaborate in small groups to design a prototype solution based on the design criteria of the given prompt * Talk about the preparation required * Coordinated with other directors and judges to organize logistics of event * Created competitors package describing scope, details, design requirements and constraints of design prompt * Bought materials required for construction of prototypes * Successful event, 20 teams registered * Answered questions, supervised, made sure the event ran smoothly * Maintained info on the competitors’ budget costs * Organized the judging process of presentation portion of competition * Made sure schedule was maintained | | | | |  |
|  | Waterloo Aerial Robotics Group   * Calibration of magnetometer for compass, Antenna Tracking task * Live GPS feedback and magnetometer allows antenna to rotate on servo motors to ensure its always facing the UAV for best signal * Exposure to soldering, pcb and schematic design, source control (git) | | | | |  |
|  | WATSAT Exterior Structure Sub-Team   * Engineering design team seeking to compete in the Canadian Satellite Design Challenge. * Gained exposure to and developed working skills in SolidWorks and the machine shop in order to help with the exterior structure design of the satellite. | | | | | 2015 |
|  | **Concrete Club**   * Participated in the mixing of concrete for the construction of the UW design team’s concrete canoe and toboggan. | | | | | 2014 |
|  | **Genius Bowl Director**   * Collaborated with other directors to organize termly trivia event on behalf of UW’s Engineering Society. * Was responsible for creating questions and answers, buying prizes, event promotion, budgeting and hosting. | | | | | 2014 |
|  | **Competitive Soccer**   * Required cooperation, commitment, dedication, physical and mental endurance to succeed as a team throughout the season. * Demonstrated leadership through responsibility for the organization, registration and management of intramural futsal team. | | | | | 2013 |
|  | **Chemistry Club**   * High school club consisting of chemistry enthusiasts who gathered weekly for a more enriched chemistry experience. * Performed demonstrations featuring flame retardants which required, material and safety preparations and a well-versed presentation. | | | | | 2014 |
|  | **Mechanical Contractors Association Kitchener-Waterloo Student Chapter**   * Responsible for meeting minutes at executive meetings and management of Google Drives as secretary for upcoming year. * Will be a project executive for upcoming MCA Student Chapter Competition which involves cost estimations for a hypothetical project proposal. * Will participate in the organization and promotion of society events like technical lectures and socials. | | | | | 2015 |
|  | **Civil Environmental Geological Engineering Society**   * Class representative for upcoming for upcoming year * Will be responsible for assisting with the organization and promotion of society events. | | | | | 2015 |
|  | **Waterloo Engineering Ideas Clinic**   * Theorized and investigated a coffee brewing machine’s mechanism * Tested product with spectroscope and pH-meter. * Disassembled and investigated the components of brewing system before reassembly. | | | | | 2014 |
|  | **Canned Food Drive**   * Participated in the collection of canned foods for the less fortunate. * Responsible for navigation of vehicle as well as keeping younger volunteers on track and in the correct neighbourhood. | | | | | 2013 |
| **Other Interests** | * **Creative Writing: blogs and poems** * **Fine arts: sketching, Piano** * **Sports: soccer, badminton, gyming??** * **Exercise** * **Dank memes** * **Hackathons** | | | | |  |