

ACADEMICS: University of Alberta MSc in Computing Science, 3.8 GPA Sep '17 – May '20
 University of Alberta BSc in Electrical Engineering with the Co-op Option Sep '03 – Dec '08
 - Average Graduating GPA of 3.9 (last 2 years), Graduated with Distinction (3.7 overall)

TECHNICAL WORK HIGHLIGHTED IN THE MEDIA:

Was the tech architect, lead developer on OpportunityAtlas.org that was released to [New York Times](#) and [NPR](#) '18
 “Edmonton data fanatic animates a century of city growth in 6 seconds”, [CBC](#) '18
 “Population growth visualized: Century of sprawl in Edmonton”, [Global News](#) '18
 “Mapping expert makes detailed census data available to all Edmonton election candidates”, [Edmonton Journal](#) '17
 “Don Iveson using new tool to reach voters”, [CTV News](#) '17
 “Hundreds of thousands of polygons rendered on the fly”, [Mapbox's Blog](#) '17
 “Is your property tax fair? New mapping project gives residents tools to better figure it out”, [Edmonton Journal](#) '17
 “New map shows visualization of Edmonton home assessments”, [Edmonton Journal](#) '17
 “Edmontonian creates app to help people in need find Edmonton services”, [MetroNews \(now The Star\)](#) '15

RECENT WORK EXPERIENCE:

- [Darkhorse Analytics \(Edmonton\), CTO & Director](#) Feb '12 – Ongoing
 - Create interactive data visualizations for clients like Proctor & Gamble to impress others and/or make executive decisions
 - Handle backend work on multithreaded, multi-instance server code with load balancing, auto scaling, CDN, etc
 - Create, help generate and handle viral content (multiple reddit frontpages, millions of impressions)
 - Lead technical strategy, hired and manage our development team
 - Organize company hackathons, one won top prizes for Apps for Alberta Competition 2015 (\$60K of \$70K prize pool)
 - Lead our hiring process, am an active mentor and advisor
 - Present and help teach data visualization through workshops and presentations
 - Create projects (next page) and helped grow Darkhorse Analytics into a multi-million dollar, internationally consulting firm
- Quick Highlights of Prior Roles (More details in Appendix) Before '12
 - Interned at Microsoft (3x), including Microsoft Startup Labs (now MSR Fuse Labs) managing skunkworks projects
 - Started a company that took ~\$40k as runner up for Alberta-wide Business Plan+Pitch Competition, failed but got acqui-hired
 - Interned at Blackberry, created app to track calibration + docs of multi-million dollar testing assets (was not my planned role)

RECENT LEADERSHIP/VOLUNTEERING EXPERIENCE:

Co-organizer, BetaCityYEG, Edmonton's civic tech meetup Oct '18 – Ongoing
 City of Edmonton Open Data Citizen Advisory Group Member Sep '17 - Ongoing
 Data Director, Cabinet, the Re-elect Don Iveson for Mayor municipal campaign (he won, 72% of vote) Jun '17 – Nov '17
 Committee Member focused on projects, Edmonton's NextGen (non-urgent but important work) Jan '17 – Dec '18
 Co-chair, the Ignite Working Group, Edmonton's NextGen (running events to engage citizens) Oct '14 – Dec '16
 Co-Founder, “Volunteer with NextGen” events, group volunteering opportunities for new volunteers Dec '15
 Volunteer, Edmonton's NextGen (making Edmonton an engaging place to live in for 18-40 year olds) Aug '11 – Oct '14
 More details in Appendix: Client/Mentor to Capstone Projects, Director of multi-million dollar co-op Before '14

TECHNICAL SKILLS:

Using Javascript (mainly with D3.js) and Python (data processing), I work with teams to create apps/visualizations that delight people. My creativity, ability to learn, and empathy overcomes technical limitations and identifies better outcomes through collaboration.

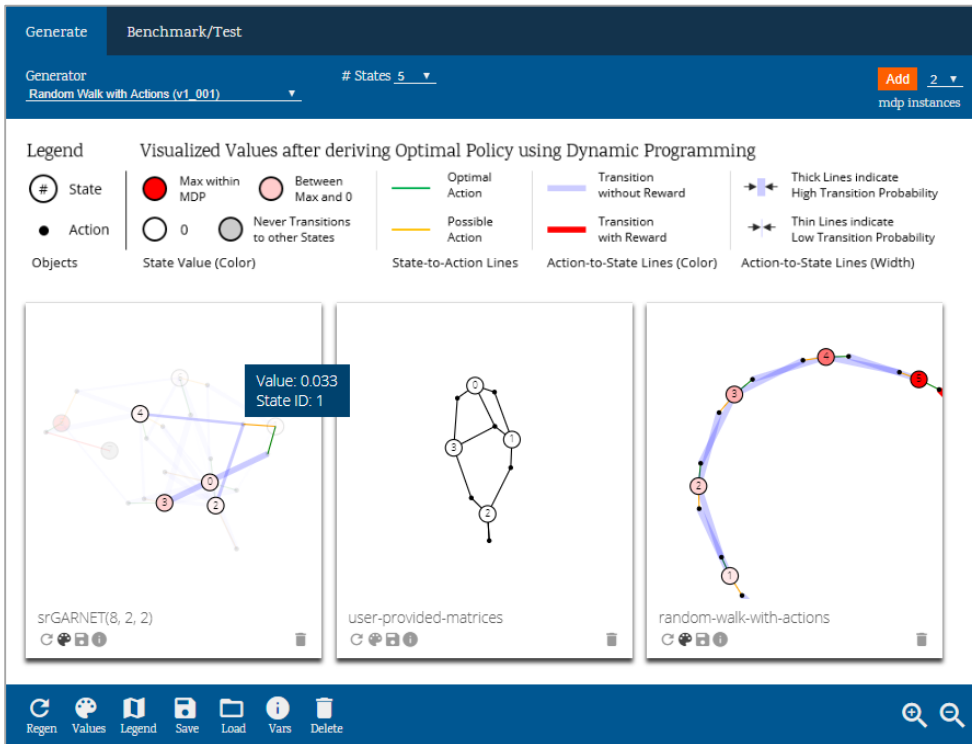
PRESENTATIONS, TALKS, WORKSHOPS:

“Visualizations Driving Decisions” Speaker, Canadian Open Data Summit, Niagara Falls Nov '18
 “Build your own Beautiful, Detailed, and Interactive Map in 4 Hours” Workshop, [OpenVisConf](#), Paris '18
 “Mapping the Crisis in Affordable Housing” Speaker, [Locate](#) (Mapbox conference), San Francisco '18
 “JS to D3” Presentation, Exchange.js (Edmonton's Javascript Meetup) ([YouTube Link](#)) '18
 “mdp.ai: Dancing, Colourful MDPs for Research & Fun” Alberta Machine Intelligence Institute Tea Time Talk '18
 “Making Boring Charts Beautiful” Workshop, International Open Data Day at the Edmonton Public Library '18
 “Hands-on Data Visualization” Workshop, StudentDevCon (Conference for Post-Secondary Students, [workshop code](#)) '18
 “The Hidden Ways Open Data Transforms Society through Innovation” Canadian Open Data Summit '17
 “A Taste of D3: Why, What's Possible, and... How!” Grant Mac University Talk about Analytics '17
 “Make Your Open Data Dance with D3” Workshop (2x), Alberta Open Data Summit & University of Alberta '16
 “A Taste of D3: Why, What's Possible, and... How!” (2x), BetaCity YEG & Jobber (tech firm) '16

AWARDS:

- Shortlist, Information is Beautiful Awards on assess.dha.io '18
- Winner, Best Lightning Talk on “Data Looks Better Naked” of International Open Data Day at the Edmonton Public Library '18
- Winner, Best Overall and Audience Pick of Exchange.js Showcase (Edmonton’s Javascript meetup) '17
- Longlist, Information is Beautiful Awards on MapInSeconds.com '16
- Winner, Edmonton’s Open Data Hackathon '16
- 3rd Place, Battlehack Singapore Hackathon (of 40+ teams) '15
- Shortlist, Information is Beautiful Awards on WorldChatClock.com, '14
- More details in Appendix: Winner, Microsoft-wide intern design competition. Outstanding service student award, etc Before '14

RECENT PROJECTS:

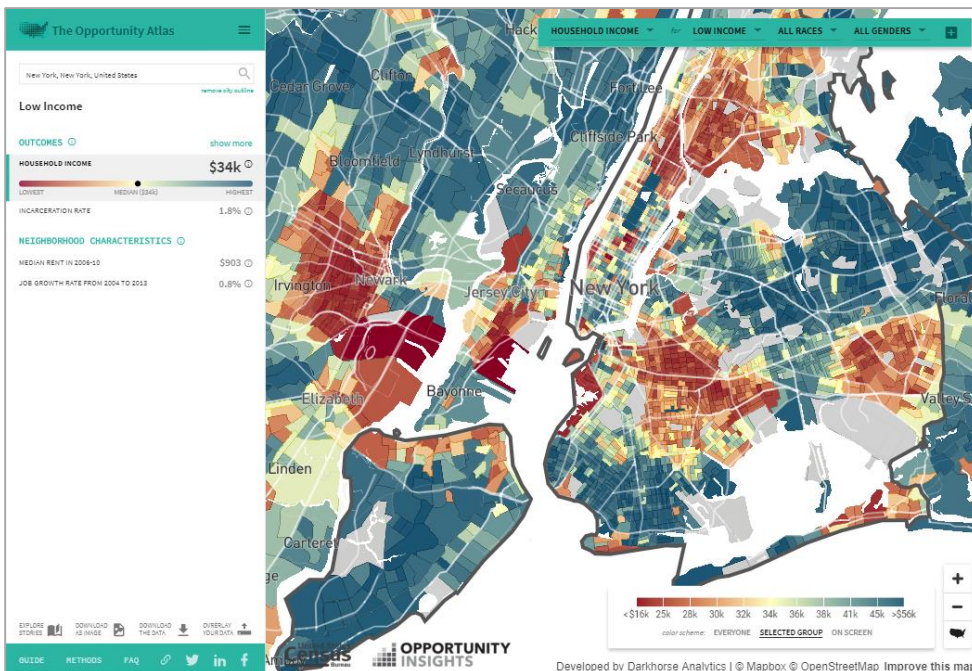


The MDP “Playground” (Ongoing)

Inspired by my Master’s course on Reinforcement Learning, I want to help demystify algorithms and make research/concepts more debuggable.

Built using D3.js, mdp.ai/playground lets users visualize their MDPs (Markov Decision Processes) just by entering in a few matrices. Knowing that ML researchers and practitioners prefer coding in Python, this tool now interfaces between visualized MDPs on the browser to agents running in Python using three lines of code!

A work in progress, it can create varied sets of MDPs using different parameters and generators to test RL algorithms for robustness. On top of benchmarking, it’s built to exist outside of mdp.ai so others can use it to show/teach MDPs, like this [live Codepen demo](#). ([Github](#))



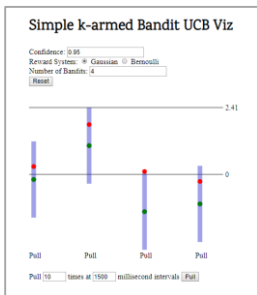
The Opportunity Atlas (Oct ‘18)

Combining U.S. Census data and work from the Opportunity Insights lab, OpportunityAtlas.org helps answer questions on upward mobility by visualizing the effect that location, race, and gender has had on outcomes like income and incarceration.

Building off the exploratory work and techniques from a previous project on property assessments, it was key to deliver the data quickly for good UX, and in making the data accessible, useful, and actionable.

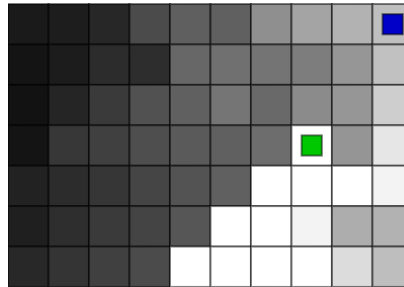
This is one of the rare client projects I have worked on that is available online: almost all my work is client-confidential, and I’m proud of the work and the [potential life-changing impact](#) this has.

RECENT PROJECTS (CONTINUED):



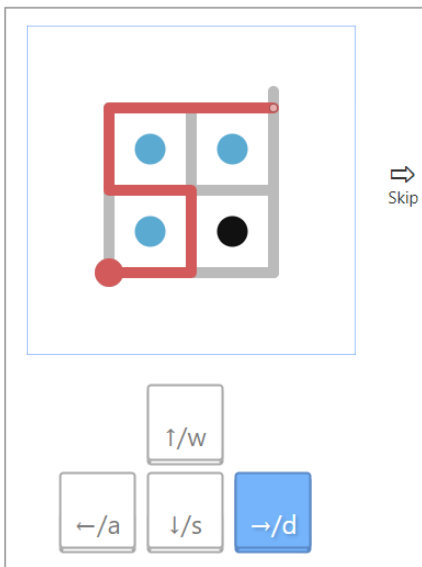
A Simple k-armed bandit UCB Viz (Apr '18)

Available on mdp.ai/ucb (temp location), I spoke to a prof about algorithms he'd like to visualize and he mentioned this one. It took two evenings, done for fun.



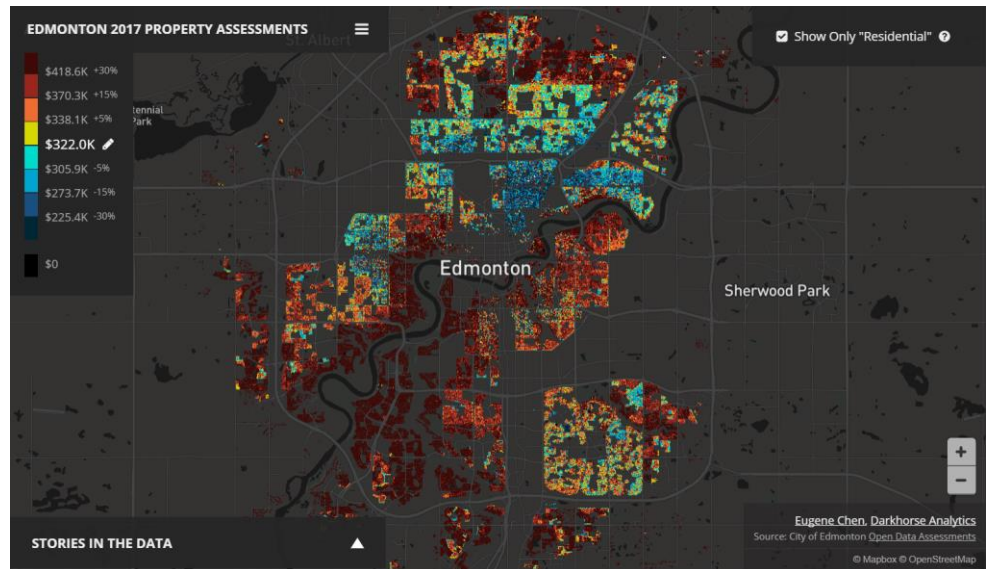
Javascript Gridworld (Dec '17)

I want to visualize AI algorithms to uncover hidden insights in my degree. Here, I ported a Python framework on Reinforcement Learning to Javascript. This was a personal project outside class.



Testing Puzzles (May '18 - Ongoing)

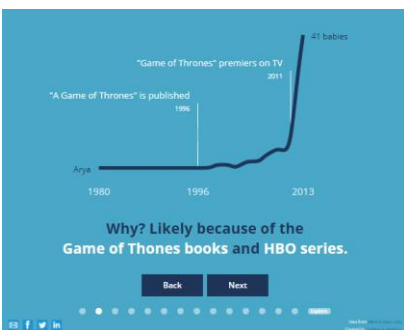
Put together a web version of a series of puzzles from "The Witness" game to help a research lab compare human performance with others who were taught using AI selected puzzles.



Compare Property Assessments (2017)

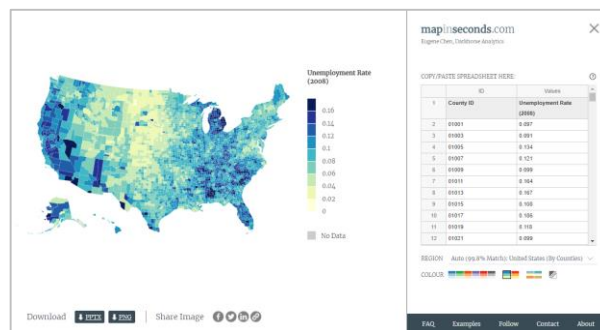
How do you visually compare hundreds of thousands of properties without losing any visual detail? assess.dha.io pushes current web based, dynamically data-driven rendering to its limits.

With the vision of showing every building, I tried SVG, Canvas, mapping frameworks (which removed edges, problematic for many simple rectangular buildings), even PixiJS (a Javascript gaming framework with WebGL).



Baby Names (2015)

My first attempt at a story-driven narrative using data, this [mobile-friendly site](#) comes complete with an exploratory tool at the end.



MapInSeconds.com (2016)

Choropleth maps seemed like they should be completely intuitive and only take a few seconds to create and share. I'm proud of this foray into allowing people to better access and interpret their own data.



WorldChatClock.com (2014)

Scheduling a meeting with someone from a different city? You shouldn't need to know their time zones.

Appendix: Detailed Text Resume

APPENDIX: EUGENE CHEN

eugene@ideaowl.com

Phone number available on request

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 - Organize company hackathons, one won top prizes for Apps for Alberta Competition 2015 (\$60K of \$70K prize pool)
 - Lead our hiring process, am an active mentor and advisor to colleagues
 - Present and help teach data visualizations in the community through workshops and presentations
 - Create projects (next page) and helped grow Darkhorse Analytics into a multi-million dollar, internationally consulting firm
- BoardSuite Corp (Toronto), Director of Technology Development Feb '11 – Jan '12
 - Assembled, trained, and managed development team. Migrated existing tech to open source platforms
 - Took over product management, forecasting and planning responsibilities
 - Implemented Agile processes, generated technology documentation and intellectual property
- nForm User Experience (Edmonton), Contracted Developer Oct '10 – Jan '11
 - Led development and fleshed out features and functionality on new, V1 product
 - Responsible for implementation of critical and sensitive components (such as authentication and admin tools)
 - Delivered fully functional product ahead of timelines and schedules
- Firenest Innovations Inc (Edmonton), CEO and Co-founder Apr '09 – Oct '10
 - Directed company, business strategy and execution
 - Development of full business plan and delivered company presentations, pitches → VenturePrize runners up (\$40k)
 - Responsible for front-end UI, UX design plus initial infrastructure development
 - Lead market research, customer feedback and acquisition efforts
- Degree-Required Co-op + Summer 3-4 Month Work Terms, ~2 Years Total Required from 2004.
 - * **Received highest possible “Excellent” grade on each of my Co-op Work Terms from employers**
- Microsoft Startup Labs, now MSR FUSE Labs (Cambridge, MA), Intern Program Manager Summer '08
 - Managed three new skunkworks projects for a future product line
 - Fleshed out concept, created deck, and presented proposed product to senior C-Level management
 - Other interns outside of my team voluntarily followed and helped me on a non-official volunteer idea
- Microsoft Visual Studio Team System, now VS Team Services (Redmond, WA), Intern Program Manager Summer '07
 - Collaborated with various teams for research project on a future product
 - Designed and implemented a unique, trackable online repository for project
 - Produced award-winning project for a Microsoft-wide intern design competition
- Microsoft Windows Live ID (Redmond, WA), Intern Program Manager Fall '06
 - Worked on improving partner/Live ID experience, collaborated with MS Research on internal project
 - Delivered on functional specs for CardSpace and rich-client Windows Live ID auth integration
 - Community Committee Member, Microsoft's 1st Asian Pacific Leadership Development Conference
- Research In Motion: RTS (Waterloo, ON), 3GPP Compliance Specialist Winter & Summer '06
 - Created Asset Management System to track compliance for multi-million dollar equipment
 - Produced a 32-page co-op report on the future of the wireless (telecommunications) industry
 - Worked with GSM, GPRS, EDGE, UMTS technologies, wireless industry operations
- Mediashaker Inc (Edmonton), SW Developer Summer '05
 - Developed on Mediashaker's CMS (Content Management System)
 - Liaised and met various clients' software development needs for multiple projects
- Worldwide Link Ltd: IT Group (Edmonton), Associate Summer '04
 - Developed company site, filtering programs, represented Worldwide Link Ltd in Kuala Lumpur
 - Planned, Rolled out solutions to Worldwide Link's growing I.T. infrastructural needs
- Ministry of Defense (Singapore), Training R & Management Centre, Mandatory Military Service Oct '00 – Feb '03
 - Developed a multi-user DBMS, did projects in India, Australia (details in *International Experience*)
 - Won several national (Singapore) awards for safety and efficiency projects

EUGENE CHEN

~ Appendix: Part 2 ~

- DBS (Singapore). Credit Risk Policy & Monitoring Sep '99 – Aug '00
 - Developed and helped perform training for two separate corporate credit analysis applications
 - Oversaw programs' and project completion, maintenance and enterprise/server deployment

TECHNICAL WORK HIGHLIGHTED IN THE MEDIA:

- Was the tech architect, lead developer on [OpportunityAtlas.org](#) that was released to [New York Times](#) and [NPR](#) '18
- "Edmonton data fanatic animates a century of city growth in 6 seconds", [CBC](#) '18
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- "New map shows visualization of Edmonton home assessments", [Edmonton Journal](#) '17
- "Edmontonian creates app to help people in need find Edmonton services", [MetroNews \(now The Star\)](#) '15

PUBLICLY ACCESSIBLE, ONLINE PROJECTS:

- [The MDP Playground](#): Generating, analyzing, and visualizing Markov Chains for debugging and more robust benchmarking '18
- [Visualized Confidence Bounds \(UCB\)](#): Showing, simulating the effect that UCB has on multi-armed bandits '18
- [OpportunityAtlas.org](#): A tool to visualize income, incarceration, and more based on race, gender, and location of birth '18
- [AI vs Human Puzzle Choices](#): This earlier version is a bit more minimalist, built to allow us to collect human trial data '18
- [A Century of Growth in 6 Seconds](#): A 6 second animated GIF showing a century of city growth '18
- [Comparing Property Assessments](#): Storytelling and dynamically visualizing hundreds of thousands of buildings '17
- [MapInSeconds.com](#): Create maps in seconds, because it shouldn't be so hard to do so '16
- [A Million Baby Names](#): A storytelling approach in highlighting patterns of baby names in Alberta '15
- [LinkYEG.ca](#): A fork of Link-SF, this site connects homeless and low-income residents with critical resources nearby '15
- [#hackYEG Budget Visualization](#): A unique visualization showing the net revenue/costs for each department and branch '14
- [WorldChatClock.com](#): Schedule meetings across continents without needing to know anything about time zones '14
- [Hockey \(NHL\) Impact](#): Do metrics like payroll, penalty minutes, save % (and more) impact performance? '13

PRESENTATIONS, TALKS, WORKSHOPS:

- "Visualizations Driving Decisions" Speaker, Canadian Open Data Summit, Niagara Falls Nov '18
- "Build your own Beautiful, Detailed, and Interactive Map in 4 Hours" Workshop, [OpenVisConf](#), Paris '18
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LEADERSHIP/VOLUNTEERING EXPERIENCE, EXCLUDING TALKS/WORKSHOPS:

- Co-organizer, BetaCityYEG, Edmonton's civic tech meetup Oct '18 – Ongoing
- City of Edmonton Open Data Citizen Advisory Group Member Sep '17 - Ongoing
- Data Director, Cabinet, the Re-elect Don Iveson for Mayor municipal campaign (he won, 72% of vote) Jun '17 – Nov '17
- Committee Member focused on special projects, Edmonton's NextGen Jan '17 – Dec '18
- Co-chair, the Ignite Working Group, Edmonton's NextGen Oct '14 – Dec '16
- Co-Founder, "Volunteer with NextGen" events, providing group volunteering opportunities for new volunteers Dec '15
- Volunteer, Edmonton's NextGen (making Edmonton an engaging place to live in for 18-40 year olds) Aug '11 – Oct '14
- Participant and Director, BetaCityYEG Oct '15 – Sep '18
- Client/Mentor for University Capstone Design Project: Cocktails Data Visualization Jan – May '14
- Client/Mentor for University Capstone Design Project: Emergency Dispatcher Game Jan – May '13
- Client/Mentor for University Capstone Design Projects: Video Blimp and Blind Sonar Projects Sep '11 – May '12
- Co-Founder, Meaet, a microfunding initiative for grassroots projects. This has run 10 times over the years. Aug '11

EUGENE CHEN

~ Appendix: Part 3 ~

LEADERSHIP/VOLUNTEERING EXPERIENCE (CONTINUED):

- 1st Runner Up (Team), Innovative Design at the Western Engineering Competition 2009 '09
- VP Awareness, University of Alberta Golden Key International Honour Society Chapter Sep '08 – Apr '09
- Representative (as student group executive), University of Alberta Student Union Leadership Summit '08
- Director, All divs (~2300 members and staff), Waterloo Cooperative Residence Incorporated (WCRI) July '06 – Mar '09
- Director of Programs, Canadian Federation of Engineering Students Congress 2008 Oct '07 – Jan '08
- Inter-Divisional Council Chair, All divs (~700 members), WCRI May '06 – Aug '06
- Committee Member, RIM Co-op Social Committee, Research In Motion (RIM) + Divisional Chair, WCRI Jan '06 – Apr '06
- President, University of Alberta SPIE Student Chapter May '05 – Apr '06
- Cofounder & Team Member, Project Stepping Stone (details in *Technological Experience*) July '05 – July '06
- Cofounder & Vice President, University of Alberta SPIE Student Chapter + Associate Tech Editor, The Bridge Sep '04 – Apr '05
- VP Academics, First Year Engineering Club Oct '03 – Apr '04

INTERNATIONAL, NATIONAL EXPERIENCE:

- Speaker, Canadian Open Data Summit '17, '18
- Student Delegate, 1st Canadian Engineering Summit 2009, Montreal May '09
- Nationals Competitor, Innovative Design at the Canadian Engineering Competition 2009 Oct '07 – Jan '08
- Director of Programs, Canadian Federation of Engineering Students Congress 2008 Oct '07 – Jan '08
- Presenter, Harvard Project for Asian and International Relations Academic Conference, Beijing Aug '07
- Selected delegate, Harvard Project for Asian and International Relations Business Conference, Hong Kong Aug '07
- Delegate, Cyberposium 12, Harvard Business School, Tech-focused MBA Conference, Harvard, Massachusetts Nov '06
- Selected delegate, Harvard College Asian Business Forum (HCABF), Mumbai, India Aug '06
- Delegate as chapter executive to Optics & Photonics 2005 (San Diego), Photonics West 2006 (San Jose) '05, '06
- Represented Worldwide Link Ltd (Canada) at K-Link International Convention, KL, Malaysia '04
- Presented at International Convention for Quality Control Circles (ICQCC) in Lucknow, India '02
- Flew to Australia as part of the Environmental Management Group '01
- Represented Canada in Hewlett Packard Global Business Challenge & Edmonton-Harbin Sister City Exchange '98, '99

ADDITIONAL TECHNOLOGY EXPERIENCE:

- Produced projects like an SMS feedback app and LinkYEG.ca for BetaCityYEG, a civic tech meetup group (2014-ongoing)
- Developed StatisticsEdmonton.com, “maptistics” + custom data for Apps4Edmonton competition, won > \$10K (2010)
- Created working Bluetooth and RFID projects that communicate tag information and computer control
- Won with the EE Team, the University of Alberta’s Engineering Week’s multidisciplinary Design Competition. (2007)
- Developed program to quickly solve “Ultimate Puzzle” with $\sim 9 \times 10^{22}$ combinations with C++
- Worked with GSM, GPRS, EDGE, UMTS technologies, wireless industry operations at BlackBerry



Left: “A Mobile Future”, a 32-page work term report on the Mobile Future, later presented at the Harvard Project for Asian and International Relations 2007 Academic Conference, Beijing, China.

Right: The Punch Punch Revolution System (PPRS): My fun-game health idea that was, with my project team for our Capstone project, brought from concept to developed prototype. 1st Runner Up for the Western Engineering Competition, went to Nationals (Canada, 2009).

EUGENE CHEN

~ Appendix: Part 4 ~

AWARDS:

- Shortlist, Information is Beautiful Awards on assess.dha.io '18
- Winner, Best Lightning Talk on "Data Looks Better Naked" of International Open Data Day at the Edmonton Public Library '18
- Winner, Best Overall and Audience Pick of Exchange.js Showcase (Edmonton's Javascript meetup) '17
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- Winner, Edmonton's Open Data Hackathon '16
- 3rd Place, Battlehack Singapore Hackathon (of 40+ teams) '15
- Shortlist, Information is Beautiful Awards on WorldChatClock.com, '14
- Winner (Over \$10K), Apps4Edmonton 2010 (Apps Competition, "The Way We Plan" with StatsYEG), '10
- Runners Up (Over \$40K), TEC VenturePrize 2010 (Alberta-wide Business Plan Competition) '10
- Golden Geer Award (in recognition of years of outstanding service to engineering students) '09
- Microsoft Popfly prototyping design competition (notified and opened to all interns) '07
- From Shell, the Top-Valued Engineering Undergraduate Leadership Award, 2006 - 2007 and 2006 - 2005 '05-07
- University of Alberta Scholarship, 2008 - 2009, Jason Lang Scholarship, multiple times '08-09
- National (Canada) In-Course Millennium Excellence Award, 2004 - 2005 '04-'05

EXPERIENCE/SKILLS/TOOLS:

Active and Major Focus

Javascript	D3.js	HTML	Responsive CSS	Data Exploration
Cloud Services (AWS)	Load testing/balancing	CDN Integration	S3/EFS/VPCs	Data Processing
Creative Brainstorming	Visualization	Teaching & Presenting	Mentoring	Strategy (Product/Firm)
Make Clients Happy	Collaborative Iterating	Dream up Ideas	Impress, Convince	De-escalation
Project Management	Reading People	Hiring	Storytelling	Design

Active/Recent

Python	Express/Node JS	Containers (Docker)	Data Analysis	Webpack
Reinforcement Learning	Devops	Cloud Monitoring	MongoDB	I.T.
Paper Reading	Database Management	reddit for traffic	Google Analytics	Office Tools
UI/UX	Tableau			

It was once a primary skill

More advanced Python	AngularJS	Ruby on Rails	PHP	TDD
JQuery	Wordpress	my/MSSQL	C++, Matlab	CI/CD
Grunt	VBA			

Actively Learning

Artificial General Intelligence (AGI)	Machine Learning (ML) and AI			
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Plan to Learn Soon

Vue.js	Three.js	WebGL	VR/AR	
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