David Tran

Developer

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Technical Skills

- OpenGL 4.5/WebGL/GLSL Shaders, CG
- C/C++11, Qt Framework, C#/.NET
- HTML5, CSS3, Javascript (ES6), Node.js, AngularJS, Gulp, Grunt, Browserify, LESS, Handlebars, Bootstrap, jQuery, PHP, Apache/IIS
- Java, Android SDK, NDK, Vuforia Augmented Reality SDK
- Git/Github
- Unity 5, three.js, Cordova, Bullet Physics, MonoGame, Lua, GameMaker: Studio, OGRE
- Blender, Maya, Visualization Toolkit (VTK)
- Windows Phone 8 SDK, Leap Motion, Kinect
- Linux (Ubuntu)/Unix Shell, Windows/Powershell
- MySQL, Oracle, SQL Server, PostgreSQL/PostGIS
- OpenShift PaaS, Amazon Web Services

Education

Master of Science (MSc), Computer Science
Ryerson University, 2015.

Thesis: Aperio: Managing 3D Scene Occlusion Using a Mechanical Tool Analogy
(11th International Symposium on Visual Computing, Las Vegas, 2015 - accepted)

Honours Bachelor of Science (BSc), Computer Science
Ryerson University, 2011.

CGPA: 4.264/4.33
(Governor General Academic Medal)

Publications

Aperio: A System for Visualizing 3D Anatomy Data Using Virtual Mechanical Tools
Springer, Lecture Notes in Computer Science *(Advances in Visual Computing, 11th International Symposium, ISVC 2015).* Authors: David Tran, Tim McInerney.

An application allowing users to break apart a complex scene of 3D models using virtual metal tools (rings, rods and cutters) to visualize and understand how parts are spatially connected; 3D anatomy data is used for demonstration. (Implemented using C++11, Qt, OpenGL/GLSL shaders) http://eternallite.github.io/Aperio

Experience

Art & Science, WebGL Developer *Feb 2016 – July 2017*

- Worked on an interactive documentary, *The Space We Hold*, for the National Film Board (NFB) which focuses on victims of sexual slavery by the Japanese army during World War II. The interactive documentary premiered at the 2017 Sheffield Documentary Festival in the UK and is based on an award-winning documentary, *The Apology*. (http://spacewehold.nfb.ca)
- The data visualization component of the site (a panning 3D starfield of orbs - comments left by users) was implemented using WebGL and threejs. The site is navigated by scrolling, with content animating in a storybook-like manner and was implemented using ScrollMagic.

Jam3, Graphics Developer *March 2015 – Jan 2016*

- Worked in a team of developers, designers, and producers to create the 2015 Ford Mustang 3D Car Customizer app on iOS, Android and Web. (https://youtu.be/JMU84aPXvcA)
- Implemented 3D projection mapping for decals on car using WebGL/three.js
- Implemented a parallelized GIF generator on the GPU, using shaders and a tonemap to create an optimized 8-bit palette; users can produce custom movie clips of the car's different angles in real-time.

- Implemented social sharing of GIFS on Twitter, Facebook, Tumblr, Pinterest across mobile devices using Cordova.
- Improved UI animations using a custom WebGL animation framework with easing functions
- Experienced in Agile programming; attended daily Scrum meetings to address and overcome roadblocks
- Delivered bug and feature tickets using PivotalTracker
- Addressed Javascript memory issues on mobile devices by improving memory footprint of base64-encoder
- Implemented GPU-based supersampling using multi-pass rendering to reduce anti-aliasing of cars
- Technologies used: Javascript, Sublime, Node.js, Gulp, Grunt, Browserify, LESS, Handlebars, WebGL/three.js, CocoonJS, Cordova.

MapYourProperty, Software Developer *Dec 2012 – June 2014*

- Built a web application providing land-use and development analytics for properties across Ontario
- Overlaid different GIS layers on top of Google Maps using the Web Map Service (WMS) in Geoserver.
- Worked on responsive design, front-end of the application using Javascript and AngularJS.
- Developed an automated report generator to analyze a property's development value by querying open government data combined with property data using PostgreSQL/PostGIS
- Produced an automated Word and PDF score report using PHPWord and MapFish
- Deployed the application to Amazon AWS servers (Ubuntu/Linux)
- Technologies used: Javascript, AngularJS, Amazon AWS, Bootstrap, PHP, Apache, PostgreSQL/PostGIS

Digital Media Zone, Software Developer *May 2011 – Jan 2012*

- Prototyped an indoor-navigational system to locate gates in Toronto Pearson and Vancouver airport using Augmented Reality markers. (Java, OpenGL, Android SDK/NDK, Eclipse, Vuforia Augmented Reality SDK)
- Helped develop Flybits' backend, a platform that pushes cloud-based services to users based on location, activity and user profile. (C#, LINQ, SQL Server)
- Developed a front-end, image-sharing application for Flybits (HTML/CSS, Javascript/AJAX, jQuery)
- Developed a Motorola Golden-i headset app that provides hands-free interaction allowing spoken commands to activate cameras, sensors or light switches.

Projects

- **Coin Island (2015)** An island sim game developed in Unity 5 for Global Game Jam 2015. Chop down trees, build shelters and bring in residents to the island; Keep residents happy and they'll make you money! Gain achievements and purchase/upgrade tools (tractor, assembly line, etc.) to be more efficient and bring in more coins. (CookieClicker-esque) http://globalgamejam.org/2015/games/coin-island
- **Environmaps (2012)** One-click land use and planning tool developed for AngelHack, an international hackathon where projects are implemented and pitched to potential angel investors (Received honourable mention and press release from ESRI Canada) http://www10.giscafe.com/nbc/articles/1/1145425/innovative-land-use-planning-app-wins-angelhack-toronto/

Awards and Distinction

- Digi Awards - Graduate of the Year Finalist (2015), nextMEDIA
- Nominated for Governor General Gold Medal (2015) for Best Computer Science Master's Defense
- Honourable Mention at Angelhack Competition (2012), Toronto (Team Environmaps)
- Governor General Academic Medal Recipient (2011): Highest CGPA across university upon graduation
- Faculty Awards for Excellence (2008): Top returning full-time degree student
- Queen Elizabeth II Aiming for the Top Scholarship (2007 - 2011)
- Top 3 Groups in Canadian Computing Competition Stage I (2006)