Eduardo Soto

Software Engineer

Toronto, CA

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Highly motivated Software Engineer and Digital Media expert, with 6+ years of varied experience. With a passion in Virtual and Augmented Reality, Game Development, and in general experimenting with new and exciting technologies.

SKILLS

Programming

java c# c c++ python
javascript nodejs npm
angular react express
typescript lua html css/sass

Design/IDEs

photoshop adobe xd gimp
blender 3d autodesk maya
visual studio netbeans
pycharm android studio
some xcode

Engines/Miscellaneous

unity 3d some unreal engine
some godot vuforia oculus
htc vive vr ar git
agile & scrum windows linux
unix

WORK EXPERIENCE (9)

Programmer Analyst at Canada Border Services Agency **April 2020- Current**
https://www.cbsa-asfc.gc.ca/

The Canada Border Services Agency (CBSA) facilitates the flow of legitimate travellers and trade.

- Design, develop, and deploy software solutions to aid with border operations.
- Part of a fully remote and dynamic team during the pandemic, which has provided the opportunity to excel when it comes to self-motivation, coordination, communication, and more.
- Engaged in on-call work to support existing solutions and applications.
- Technologies: Microsoft Dynamics 365, C#, Typescript/Javascript, Angular, general Web Development technologies, and more.

Programming Instructor at Real Programming 4 Kids **October 2019- Current**
https://realprogramming.com/

Online coding classes where kids learn computer programming in small classes with a maximum of 4 students per instructor.

- Pre-pandemic in person classes; Was the instructor teaching game programming lessons to kids aged 8-17.
- During the pandemic we moved our operations to an online format, where I teach kids aged 8-17 in courses from beginning programming concepts, to advanced software based on creating games with various programming languages, libraries, and engines. Kids get to learn fundamentals as well as more advanced concepts as well as mathematics and physics.
- Technologies: Python, Java, Javascript, C#, C++, Visual Studio, Processing, Netbeans, Eclipse, Pycharm/Pygame.

Digital Prototype Developer at Canadian Museum of History **October 2019- March 2020**
https://www.historymuseum.ca/

To enhance Canadians' knowledge, understanding and appreciation of events, experiences, people and objects that reflect and have shaped Canada's history and identity, and also to enhance their awareness of world history and cultures.

- I was responsible for research and development of new technologies that could be integrated into existing or future exhibits.
- Ranging from mobile app development, augmented and virtual reality experiences, touch table interactives, and more in order to provide a more immersive and engaging experience for museum visitors.
- Technologies: Unity 3D, Vuforia, Oculus/HTC Vive VR Development, NodeJS, Ionic, Photogrammetry, Augmented Reality, Mixed Reality, and more.

Software Engineer (Full Stack Developer) at Carleton University School for Studies in Art and Culture
July 2019- September 2019
https://carleton.ca/ssac/

- Designed and implemented the Transgender Media Portal website for Dr. Laura Horak, professor at the School for Studies in Art and Culture, Carleton University.
- This work included designing the overall look, feel, and structure of the website. Created designs and wireframes with Adobe XD through iterative work with regular feedback from stakeholders. Implementation of the website was done by setting up an Apache server, configuring DNS for domain, and installing Drupal 8 on a development server and a live server.
- Technologies: Drupal, Html, Css, Javascript, JQuery, PHP, Twig, Yaml, MySQL, and more

Web Developer at OPIN Software **June 2019- April 2019**
https://opin.ca

OPIN designs and builds digital web, mobile and app experiences to make digital better.

- During my internship at OPIN Software, I refined my skills as a Drupal developer while developing the main marketing website for the company, programmed in Drupal 8 solving complex technical challenges.
- With daily standup meetings as we followed Agile principles and SCRUM to effectively accomplish tasks set in weekly sprints.
- Implementation of the site was done using Drupal 8, with Gitlab and Acquia as collaboration and hosting services.
- Technologies: Drupal, Html, Css, Sass, Javascript, JQuery, PHP, Twig, Yaml, MySQL, and more

Digital Prototype Developer at Canadian Museum of History **September 2018- March 2019**
https://www.historymuseum.ca/

To enhance Canadians' knowledge, understanding and appreciation of events, experiences, people and objects that reflect and have shaped Canada's history and identity, and also to enhance their awareness of world history and cultures.

- Researched new technologies for the modernization of the museum experience.
- Developed an Augmented Reality prototype application using Unity 3D, Vuforia, Ionic, Angular, Node.js, and other technologies.
- Among my research and development duties, I was also tasked with troubleshooting and maintaining proper functionality of digital experiences throughout the different exhibits at the museum.

Digital Prototype Developer at ColonyVR **May 2018- August 2018**
https://www.colonyvr.com/

Ottawa's first public Virtual Reality studio.

- Work with group events from corporate gathering to children's parties to promote VR as well as develop prototype VR applications.
- VR applications were developed as potential games and experiences to be added in the repertoire of software in the arcade.
- Used Unity 3D, and VR headset HTC Vive to create immersive and entertaining experiences.

Contract Instructor at Carleton University CSIT **January 2018- May 2019**
https://www.csit.carleton.ca/

Shaping the digital world of the future together. More than ever before, information technology specialists need a deeper understanding of their field.

- Instructor of Advanced Topics in Multimedia - 3D User Interfaces.
- Handled over 50 students with assignments and projects related to Virtual Reality, Augmented Reality, Game development, Computer Vision, Artificial Intelligence, and Machine Learning.
- Managed and guided teaching assistants tasked with grading, conducting workshops, and doing research for appropriate content for the students.
- Developed assignments, workshops, and presentations related to the various topics discussed in class.

Software Engineer Intern at Microsoft Research Cambridge **June 2015- December 2015**
https://www.microsoft.com/en-us/research/lab/microsoft-research-cambridge/

At Microsoft Research in Cambridge, we truly aspire to transform the world through deep research.

- Developed prototypes for new and innovating technologies in Virtual Reality related to hand tracking technology.
- Video demonstration of the work accomplished can be found at https://www.youtube.com/watch?v=QTz1zQAnMcU.
- Using C++, C#, Unity 3D, and other technologies in an Agile and Scrum environment, a series of prototypes and a fully formed video game was created. Ultimately, the collaborative work was submitted and published to SIGGRAPH 2016.

EDUCATION (2)

Masters Information Technology - Digital Media at Carleton University
2017 - 2020

Bachelors Software Engineering (Game Design) at McMaster University
2011 - 2017

PUBLICATIONS

Text Entry in Virtual Reality: Implementation of FLIK Method and Text Entry Testbed in International Conference on Human-Computer Interaction
8 October 2020

We present a testbed for testing text entry techniques in virtual reality, and two experiments employing the testbed. The purpose of the testbed is to provide a flexible and reusable experiment tool for text entry studies, in such a way to include studies from a variety of sources, more specifically to this work, from virtual reality text entry experiments. Our experiments evaluate common text entry techniques and one novel one that we have dubbed the Fluid Interaction Keyboard (FLIK). These experiments not only serve as a way of validating the text entry test-bed, but also contribute the results of these studies to the pool of research related to text entry in virtual reality.

Efficient and precise interactive hand tracking through joint, continuous optimization of pose and correspondences in ACM Transactions on Graphics
1 July 2016

Fully articulated hand tracking promises to enable fundamentally new interactions with virtual and augmented worlds, but the limited accuracy and efficiency of current systems has prevented widespread adoption. Today's dominant paradigm uses machine learning for initialization and recovery followed by iterative model-fitting optimization to achieve a detailed pose fit. We follow this paradigm, but make several changes to the model-fitting, namely using: (1) a more discriminative objective function; (2) a smooth-surface model that provides gradients for non-linear optimization; and (3) joint optimization over both the model pose and the correspondences between observed data points and the model surface.

LANGUAGES

English **Spanish** **French (Beginner)**