ALEXANDER JURCAU

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Note: Most main project titles below, and the usernames above, are hyperlinks.

EMPLOYMENT

Ubisoft — June 2018 - Current

Tools Programmer · Toronto

- Lead development of a company-wide service-consolidating production tool to add context to created tasks in meetings and director reviews - automated video and audio capture / upload (FFMPEG), JIRA creation, game plugins, etc, **saving ~8 hours** per task
- Oversaw technical side of execution-time automated testing framework supporting **hundreds of internal clients and testers**
- Collaborated on the development of a robust **Python and Choco tool packaging pipeline** - lead the forefront of company transition to project-agnostic tool development
- Drafted comprehensive **technical documents** including sequence diagrams, wireframes, and crafting paper prototypes for new tools and workflows

ARnocular — May 2017 - Current

Augmented Reality Software Developer · Toronto

- Implemented a system that **dynamically downloads AssetBundles and displays 3D models from a database,** requesting and parsing CSV files
- Developed an accurate **linear regress system** using GPS points to smoothly move between perceived user locations
- Collaborated smoothly with **Git** version control; experience with Prod/QA/Dev pipeline, branching, merging, stashing, working with a remote repo

Youth Fusion — Mar. 2017 - May 2018

Video Game Design Coordinator · Toronto

- Taught for a local non-profit after-school program aimed to decreasing high school drop-out rates by teaching all aspects of video game development
- Oversaw the development of 2 fully polished games, following a Prototyping/Alpha/Beta/Gold staging process
- Verbally **communicated** complex game design concepts to children in simple and easy-to-understand ways

Inmar — May 2016 - Aug. 2016

Systems Support · Toronto

- Developed **SSIS packages** for data transfer between SQL Server databases and uploads/downloads from/to Excel files
- Developed **T-SQL scripts** for comprehensive field level discrepancy reports
- Created **testing automation jobs** for data integrity and consistency, including test case creation, execution and results logging

PROJECTS

Holo-Mole - (Holography School Project + Unity Personal Project) — Mar. 2018 - Apr. 2018

- Innovative AR whack-a-mole game that uses Vuforia image and model targets recorded onto a **physical rainbow-transfer hologram**
- Showcased at the **International Symposium on Digital Holography 2018** as a new application of holographic technology

Google Spy - (UofTHacks 2018: Unity C# and Javascript Developer | Runner-Up for Best Game) — Jan. 2018

- Innovative **Google Home voice-controlled Unity game**, with the ability to control player movement and combat via voice commands
- Implemented **Javascript** solution to make Actions by Google query results available to Unity in **Firebase database**

TranslatAR - (MHacks 9: Unity C# Developer | Most Innovative Hack Award) — Mar. 2017 - Dec. 2017

- Real-time **Augmented Reality** translation app that uses **object recognition** to translate the surrounding environment
- **Contracted** for Toronto startup **Voila Learning** to implement similar technology for their platform
- Utilizes **Google Cloud's Vision** API for the object recognition and **IBM Watson's Translation & Speech-To-Text** APIs for translation features

SKILLS

COMPUTER LANGUAGES: Python, C++, C, C#, T-SQL, Java, Git, LaTex
HUMAN LANGUAGES: English (Fluent), Japanese (Conversational), Romanian (Conversational)
TECHNOLOGIES: Visual Studio, Qt, Adobe Illustrator, ELK, Microsoft SQL Server, Perforce, Unity, Audacity, Construct

EDUCATION

University of Toronto - St. George

H.B.Sc. Computer Science Specialist - Expected 2020

• Related Coursework: Data Structures | Algorithm Analysis | Software Design | Artificial Intelligence | Operating Systems | Multi-threaded Programming
• Dean's List, President's Entrance Scholarship

Microsoft Database Administration Fundamentals (MTA: 98-364)

• Score: 92/100, proves proficiency in T-SQL scripting and database administration concepts

SMALLER PROJECTS

Through Hana - (Unity Personal Project) Mar. 2018

- Wrote **vertex displacement** shader and **splat-map** shader to emulate "walking on the clouds"

Uniform Grid Implementation - (C++ Personal Project) Mar. 2018

- Implemented a **uniform grid collision detection system** that increased efficiency by ~1000% compared to brute-force methods

Snake & Level Editor Dev Tool - (C++ Personal Project) Mar. 2018

- Created simple snake game and mouse-controlled level editor with text file reading/writing

Re-Lec (Software Engineering School Project) Jan. 2018 - May 2018

- A platform for students to upload and view lecture recordings using token-based reward system
- Implemented mobile application portion of project which includes user authentication, mobile video recording, HTTP binary data file upload
- Managed and worked with a team of 7 developers -Git branching and merge request workflow

Kleptomanihat - (UofT Game-Making Deathmatch: Unity C# Developer | 1st Overall, Best Gameplay) Dec. 2017 - Jan. 2018

- Developed a 2D platformer enemy script with line-of-sight, enemy spotted behaviour, and movement behaviour
- Completed and polished product, tested, progressive tutorial, menu and game UI, game beginning and end states

Game Nani - (THacks2: Unity C# Developer | Best Developer Tool) Oct. 2017 - Dec. 2017

- Data-oriented **dev tool** for Unity projects, aimed to optimize and **automate playtests**
- Devised complex internal data structures for comprehensive data logging / graphing and JSON object compatibility
- Implemented user camera movement tracking through raycasts, on pre- or post-defined GameObjects of interest

DieDie - (Unity Personal Project) Oct. 2017 - Dec. 2017

- Project on-pause, working with a small team on a mobile, online, casual dice and board-game inspired app
- Abstracted code into **clear class-based designs**, with minimal dependencies, including a Game State system for easy state management and transition
- Implemented a **top-down path-following solution** that works with multi-leveled environments

Finding Yin - (Unity Personal Project) June 2017 - Aug. 2017

- On-and-(currently)off project, 2D platformer inspired by Yin and Yang and Japanese zen elements
- Created own robust **level and score managing system**, and own vector character sprites and background elements

Bouncy Cloud Shader - (Unity Personal Project) June 2017 - Aug. 2017

- Learned to work with Unity ShaderForge to attempt to create a realistic bouncy-cloud shader with a gradual vertex offset at point of contact, and natural flowing clouds

Code Bumpin' - (UofTHacks 2017: Unity Game Developer) Jan. 2017

- A 3D platformer based on music visualization, made in less than 24hrs
- **Split audio signal** into 512 samples, 8 frequency bands, and 1 average amplitude, using buffers to have smooth movement of 3D bars
- Contacted popular EDM artists for legal commercial use of their songs (including Far East Movement and Electric Mantis)

Snake DIMENSIONS - (Unity Personal Project) Dec. 2016 - Jan. 2017

- **Published on Google Play Store**, worked with Google Play Developer Console
- Implemented **Unity Singleton pattern** for consistent GameObjects such as background music across all scenes

Cookie Byter - (QHacks 2016: Full Stack Web Developer) Mar. 2016

- Clicker game inspired by "Cookie Clicker", but transformed into a "byte" oriented game, instead of tasty treats
- Integrated and **synchronized click event** scripts
- Implemented tool tips on scroll over text with Javascript
- Used HTML/CSS to create entertaining game design elements
- Integrated **persistent data logging** for in-depth game statistics

Airplane Simulator (Java School Project) 2014

- Physics based simple 3D airplane simulator made only from the standard library in Java
- Utilized complex physics concepts in implementation of 3D movement
- Perspective, utilizing angles to move objects, and velocity were taken in account for realistic simulation

Building Personal Computer (Hardware Personal Project) 2013

- Learned a deep knowledge of computer hardware and how components interact
- Implemented AMD’s Crossfire video card technology
- Created a personal configuration for Windows 8