

ALEXANDER JURCAU

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Note: The personal website above has a detailed and complete collection of all notable projects.

EMPLOYMENT

Guild Studio Inc.

Game Engineer (Unannounced Project) · Tokyo, Japan

Dec. 2020 - Current

Ubisoft

Tools Programmer (Watch Dogs Legion) · Toronto, Canada

May 2020 - Nov. 2020

- Lead the design and development of an internal **automated security protection-applying tool** using **Powershell** (psake) & **Gitlab CI**, and HTML/CSS/JS frontend, for sending secure builds to external vendors on-demand
- Constructed project-agnostic web tool in React with the ability to **remotely send commands to any game or engine instance**, also providing users with a fully customizable drag & drop, shareable interface, without the need of a backend
- Developed in-house online service consolidating webapp tool in **React** as a fullstack developer - handling the configuration of the shop, scheduled events, etc.
- Wrote an HTML report automation tool in **Python** that collects data from **JIRA** and **Confluence** to summarize weekly and monthly critical issues
- Upgraded **Photoshop SDK** from CC6 to CC2020 including internal C++ tools and JavaScript plugins

June 2018 - Aug. 2019

Generalist Programmer Intern (Watch Dogs Legion) · Toronto, Canada

- Lead development of a company-wide service-consolidating production tool in Python / C# 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 an automated integration testing framework supporting **hundreds of internal clients and testers**
- Resolved Sony **TRC** online-related issues, leading to experience with the PS4 development process
- Drafted comprehensive **technical documents** including sequence diagrams, wireframes, and crafted paper prototypes for new tools and workflows
- Started the **Ubisoft Toronto Japanese Learners club** - teaching up to N2 Japanese, creating weekly worksheets, and organizing weekly language exchanges

ARnocular

Augmented Reality Software Developer · Toronto, Canada

May 2017 - Sept. 2019

- Implemented a system that **dynamically downloads AssetBundles and displays 3D models from a database**, requesting and parsing CSV files
- Developed an accurate **linear regression 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

Video Game Design Coordinator · Toronto

Mar. 2017 - May 2018

- 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
- Verbally **communicated** complex game design concepts to children in simple and easy-to-understand ways

Inmar

Systems Support · Toronto

May 2016 - Aug. 2016

- 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

PROJECTS

Tungsten and Sparky - (ToJam 2020 - Unreal Engine 4 Project)

May 2020

- Local two player coop game, created with a team of 10 people (3 programmers, 4 artists, 3 musicians)
- Implemented entirely custom **physics-based player controllers** and **physics-based attached rope** between players using **Blueprints**

EspionAge - (Unity Project)

Jan. 2020 - Apr. 2020

- Open world comedy stealth game, created with a team of 9 people (4 programmers, 3 artists, 2 musicians)
- Implemented entire generic **mission system**, and specific mission logic and **cutscenes**, also integrating with all other game systems
- Implemented **player control, camera, region systems**, providing a cohesive world traversal experience for the player
- Designed all gradual **tutorialization**, including main tutorial level design and logic, and all mechanic introduction UI throughout game

SKILLS

COMPUTER LANGUAGES: Python, Javascript, C++, C#, C, T-SQL, Java, Racket, Haskell, Dafny

TECHNOLOGIES: Unity, Visual Studio, Qt, ELK, Perforce, React, Redux, Git, Express, Mongo, Node, Unreal Engine

HUMAN LANGUAGES: English (Fluent), Japanese (N2 - Business Level), Romanian (Conversational)

EDUCATION

University of Toronto - St. George

H.B.Sc. Computer Science Specialist 2020

Japanese Language Proficiency Test - N2

Microsoft Database Administration Fundamentals (MTA: 98-364)

SMALLER PROJECTS

Personal Website (jurcau.com) - (React + Material UI) <ul style="list-style-type: none">Entirely custom and robust localization system, and personally translated into JapaneseHigh-detail and highly-customizable project showcasing framework with robust tagging and filtering system, and support for all media typesOptimized and tested on all screen-sizes	Dec. 2019 - Current
EventListeners <ul style="list-style-type: none">Fully implemented social media platform built from scratch using a React frontend and Express backendLead frontend development utilizing the Material UI framework to provide a simple, clear, and consistent user flow throughout the appDesigned and implemented REST API and integration with frontend	Sept. 2019 - Dec. 2019
Holo-Mole - (Holography School Project + Unity Personal Project) <ul style="list-style-type: none">Innovative AR whack-a-mole game that uses Vuforia image and model targets recorded onto a physical rainbow-transfer hologramShowcased at the International Symposium on Digital Holography 2018 as a new application of holographic technology	Mar. 2018 - Apr. 2018
Snake & Level Editor Dev Tool - (C++ Personal Project) <ul style="list-style-type: none">Created simple snake game and mouse-controlled level editor with text file reading/writingImplemented a uniform grid collision detection system that increased efficiency by ~1000% compared to brute-force methods	Mar. 2018
Google Spy - (UofTHacks 2018: Unity C# and Javascript Developer Runner-Up for Best Game) <ul style="list-style-type: none">Innovative Google Home voice-controlled Unity game, with the ability to control player movement and combat via voice commandsImplemented Javascript solution to make Actions by Google query results available to Unity in Firebase database	Jan. 2018
Re-Lec (Software Engineering School Project) <ul style="list-style-type: none">A platform for students to upload and view lecture recordings using token-based reward systemImplemented mobile application portion of project which includes user authentication, mobile video recording, HTTP binary data file uploadManaged and worked with a team of 7 developers -Git branching and merge request workflow	Jan. 2018 - May 2018
Kleptomanihat - (UofT Game-Making Deathmatch: Unity C# Developer 1st Overall, Best Gameplay) <ul style="list-style-type: none">Developed a 2D platformer enemy script with line-of-sight, enemy spotted behaviour, and movement behaviourCompleted and polished product, tested, progressive tutorial, menu and game UI, game beginning and end states	Dec. 2017 - Jan. 2018
Game Nani - (THacks2: Unity C# Developer Best Developer Tool) <ul style="list-style-type: none">Data-oriented dev tool for Unity projects, aimed to optimize and automate playtestsDevised complex internal data structures for comprehensive data logging / graphing and JSON object compatibilityImplemented user camera movement tracking through raycasts, on pre- or post-defined GameObjects of interest	Oct. 2017 - Dec. 2017
TranslatAR - (MHacks 9: Unity C# Developer Most Innovative Hack Award) <ul style="list-style-type: none">Real-time Augmented Reality translation app that uses object recognition to translate the surrounding environmentContracted for Toronto startup Voila Learning to implement similar technology for their platformUtilizes Google Cloud's Vision API for the object recognition and IBM Watson's Translation & Speech-To-Text APIs for translation features	Mar. 2017 - Dec. 2017
Code Bumpin' - (UofTHacks 2017: Unity Game Developer) <ul style="list-style-type: none">A 3D platformer based on music visualization, made in less than 24hrsSplit audio signal into 512 samples, 8 frequency bands, and 1 average amplitude, using buffers to have smooth movement of 3D barsContacted popular EDM artists for legal commercial use of their songs (including Far East Movement and Electric Mantis)	Jan. 2017
Snake DIMENSIONS - (Unity Personal Project) <ul style="list-style-type: none">Published on Google Play Store, worked with Google Play Developer ConsoleImplemented Unity Singleton pattern for consistent GameObjects such as background music across all scenes	Dec. 2016 - Jan. 2017
Cookie Byter - (QHacks 2016: Full Stack Web Developer) <ul style="list-style-type: none">Clicker game inspired by "Cookie Clicker", but transformed into a "byte" oriented game, instead of tasty treatsIntegrated and synchronized click event scriptsImplemented tool tips on scroll over text with JavascriptUsed HTML/CSS to create entertaining game design elementsIntegrated persistent data logging for in-depth game statistics	Mar. 2016
Airplane Simulator (Java School Project) <ul style="list-style-type: none">Physics based simple 3D airplane simulator made only from the standard library in JavaUtilized complex physics concepts in implementation of 3D movementPerspective, utilizing angles to move objects, and velocity were taken in account for realistic simulation	2014
Building Personal Computer (Hardware Personal Project) <ul style="list-style-type: none">Learned a deep knowledge of computer hardware and how components interactImplemented AMD's Crossfire video card technologyCreated a personal configuration for Windows 8	2013