Arsh Khokhar

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EDUCATION

UNIVERSITY OF MANITOBA

Bachelor of Computer Science Honours Co-op
Jan 2017 - May 2021

First Class Honours

Cumulative GPA: 4.01 / 4.50

Concentrations: Computer Graphics and HCI • Artificial Intelligence • Web-based Systems

Dean's Hons. List: Fall 2020, Winter 2021

SKILLS

Languages: C/C++ • C# • Python • Java • JavaScript • HLSL • GLSL

Technologies: OpenGL • WebGL • ReactJS • NodeJS • Tensorflow • Keras • SQL

PROJECTS

REAL-TIME RAYTRACER

Unity3D, C#, HLSL Compute

- A GPU based real-time ray tracer based on the Phong Shading model.

FLUIDSIM

JavaScript, WebGL, GLSL

- Real-time fluid simulation on GPU based on the Navier-Stokes equations.

THE CNN PROBLEM

Research Project

- Technical results and online algorithms for the Orthogonal and Continuous CNN problem variants of the Generalized k-server problem.

GROUND ROBOT NAVIGATION

Research Project

- Navigation strategies for ground robots with 3 degrees of freedom in known and unknown environments.

KEYLOGGING ATTACKS AND NEURAL NETWORKS

Research Project

- Improving timing-based Keylogging attacks using a Neural Network and NLP.

EXPERIENCE

VEEVA SYSTEMS | Software Engineer 1

Toronto, ON   Aug 2021 - Present

Java, Spring, JavaScript, ReactJS

- Developing applications and features for consumer products and chemical industries to expedite their Regulatory processes.
- Spearheading many technical aspects of the team by establishing new design patterns in the code-base, leading major refactoring tasks, introducing Graphics and ML concepts where appropriate, solving production issues, and as an on-boarding buddy of new-hires.
- Ensuring high quality of deliverables as a scrum master and test pass rate owner of the team.

UBISOFT | Tools Programmer Intern

Winnipeg, MB   Jun 2020 - Aug 2020

C++, HLSL

- Developed and maintained features in the Rendering and Animation pipeline of proprietary game engine for upcoming AAA titles.
- Researched and implemented new algorithms for realistic and scalable real-time Physically-based animations. Worked closely with technical leads and art directors to create artistically and technically feasible solutions by combining multiple techniques.
- Migrated prototype features with essential extensions and refactoring to the pipeline, making them production-ready.

ELECTRONIC ARTS | Software Developer Intern

Vancouver, BC   Sep 2019 - Dec 2019

C++, C#, .NET, WPF

- Designed and developed tools to improve the animation authoring workflows in EA's proprietary game engine Frostbite.
- Spearheaded the development of advanced animation debugging features for run-time game code in Frostbite.
- Collaborated with the UI/UX team to design intuitive editor UIs for artists and animators.
- Worked closely with the Software Engineers and Animators of games such as FIFA and Madden to ensure high user satisfaction of the deliverables.

UBISOFT | Tools Programmer Intern

Winnipeg, MB   Jan 2019 - Apr 2019

Python, OpenCV, Tensorflow, OpenGL, Qt, Docker, ZeroMQ

- Designed and developed Machine Learning based tools for expediting terrain-authoring workflows in proprietary game engines.
- Achieved an accuracy of up to 82 % of machine learning models for terrain authoring and world-building, which eliminated hours of manual work of artists while still allowing them to have fine control over the details.
- Built specialized UIs and Renderers for modularity and multi-engine support of the tools developed.
- Deployed machine learning models on internal clusters; added network support to the tools for multi-client usages.