Vic Roberts

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About Me:

Honours student studying computer graphics at VUW interested in real-time rendering and computational mathematics.

Education:

- **Victoria University of Wellington, School of Engineering and Computer Science**
- Bachelors of Science in Computer Graphics with First Class Honours
  February 2022- June 2023
- Bachelors of Science in Computer Graphics (major) and Mathematics(minor)
  February 2019 – November 2021

Technical Skills:

- Languages:
  - C, C++, C#, HLSL, Java, Python
- Graphics APIs:
  - Vulkan, DirectX12, Metal, OpenGL
- 3D Software:
  - Blender, Autodesk Maya
- Data Science/Machine Learning:
  - DEAP, PyTorch
- Worked in the following platforms:
  - Linux, Windows, macOS

Professional Experience:

- **Research Assistant**
  Computational Media Innovation Centre, VUW, Wellington, NZ (February 2023 – Present)
  - Worked with a team of researchers and development staff to develop the performance "Real-time Stage Modelling and Visual Effects for Live Performances" which was presented to a live audience in SIGGRAPH 2023 and won the Audience Choice award.
  - Responsible for improving real-time LiDAR data streaming and processing done though Unity compute shaders.

- **Summer Scholarship/Research Assistant**
  Computational Media Innovation Centre, VUW, Wellington, NZ (November 2022 – February 2023)
  - Worked with view synthesis paper's authors to develop a framework in Unity using C# to survey performance of paper's algorithm's output.
  - Kept researchers constantly updated with project status with weekly presentations.

- **Tutor**
  Victoria University of Wellington, Wellington, NZ (July 2020 – November 2022)
  - Assisted university lecturers with engineering and computer science courses.
  - Supervised help-desks assisting students with course topics and assignments and supervised tutorials which revised content of course.
  - Course topics included programming in C/C++, programming using OpenGL and implementation of algorithms and data structures in Java.

- **Summer Scholarship/Research Assistant**
  Computational Media Innovation Centre, VUW, Wellington, NZ (November 2021 – February 2022)
  - Investigated background research done for feather structure and geometry generation, which was summarised into a literature review for key researchers of project.
  - Developed Autodesk Maya plug-in using C++ to generate feather structure with parameters that update in real-time.
  - Summarised plug-in's features development into report and presentation at end of scholarship.

- **Research Assistant**
  Victoria University of Wellington, Wellington. NZ (November 2020 – February 2021)
  - Worked on Moth, an experimental interpreter for programs written in the Grace language.
  - Worked in a team of developers and researchers in implementing new features and improving software management of interpreter(improving building process, introducing new tests, expanding documentation).

Communication and Interpersonal Skills:

- Course tutoring for computer science courses which involved leading other tutors and students.
- Writing reports and presentations about research software.
- Collaborating with researchers based in artificial intelligence, computer graphics and programming languages.

Additional Experience:

- **Hack to the Future ChatGPT Hackathon**
  (May 2023)
  - Participated in the Hack to the Future ChatGPT Hackathon hosted by Provoke Solutions in Wellington.
  - Worked with a team of 5 developers to develop website in 2 days that uses ChatGPT and LangChain to analyse and summarise git logs and public emails of team members.
  - Responsible for prompt engineering and back-end development using Python.
- **SPLASH 2022 Student Volunteer**
  (December 2022)
  - Collaborated with sessions' chairs, other student volunteers and conference organizing committee to ensure conference of 500 participants from around the world went smoothly.
  - Helped set up technology to assist both offline and online participants and assisted with technical issues during talks.
  - Assisted with editing and uploading recorded talks onto ACM SIGPLAN Youtube channel.
- **Pacific Graphics Student Volunteer**
  (October 2021)
  - Helped organisers with running the flagship conference of the Asia Graphics Association, which was virtual in 2021 due to COVID-19.
  - Supervised and coordinated online talks(both live and pre-recorded) as a session assistant
  - Supervised online information desk to help guide conference participants.

References available on request