Yu Ju (Edwin) Chen, PhD

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Programming Languages, APIs

- C++, Python, Cuda, DirectX, HLSL, Matlab, NodeJs, Javascript, React, Typescript, C#, OpenGL, ThreeJs, HTML, CSS

Skills

- Scientific Computing, Numerical Linear Algebra, Machine Learning, GPGPU development, 3D Mathematics, CI/CD, CMake, Git, Docker, Linux, Shell Scripting, AWS, Azure, GCP, Object-oriented design, Concurrency, Parallel Computing, Blender, Houdini

Education

- **PhD, University of British Columbia** **Vancouver, British Columbia**
  Computer Science Advisors: Uri Ascher, Dinesh Pai *Sep 2014 - May 2020*
  Dissertation: Integrators for elastodynamic simulation with stiffness and stiffening
- **BASc, University of British Columbia** **Vancouver, British Columbia**
  Engineering Physics *Sep 2009 - April 2014*

Experience

- **Senior Researcher - Tencent America, Graphics and Vision**, Los Angeles, CA *Feb 2022 - Present*
  - Conducted extensive research on GPU-based numerical algorithms for hair simulation, leveraging localized data structures and parallel computing in Cuda and DirectX compute shaders
  - Led efforts in architecture design, emphasizing object-oriented patterns for enhanced maintainability and efficiency
- **Research Software Engineer - Rapidia Tech Inc**, Vancouver, BC *July 2019 - Jan 2022*
  - Served as the founding software engineer, building and leading a team from the ground up
  - Designed and executed both IT and engineering infrastructure to support the growth and development of the company
  - Developed and maintained a 3D visualization and printer control app, providing an intuitive and user-friendly experience for clients
  - Troubleshot and resolved complex communication protocols for furnace controllers, ensuring reliable and efficient operations
- **Research Intern - Adobe Creative Technologies Lab**, Seattle, WA *May 2017 - Aug 2017*
  - Innovated in soft body dynamics and published research findings at the SCA2019 conference.

Publications

- **Towards Realtime: A Hybrid Physics-based Method for Hair Animation on GPU** SCA 2023
- **SIERE: A Hybrid Semi-Implicit Exponential Integrator for Efficiently Simulating Stiff Deformable Objects** ACM TOG 2020
- **EigenFit for Consistent Elastodynamics Simulation Across Mesh Resolution** SCA 2019
- **Exponential Rosenbrock-Euler Integrators for Elastodynamic Simulation** IEEE TVCG 2017

Awards

- **NSERC PGSD, University of British Columbia** $63000
- **NSERC CGSM, University of British Columbia** $17500
- **Roy Nodwell Memorial Prize, University of British Columbia** $1000
- **J Fred Muir Memorial Scholarship, University of British Columbia** $1000