

# Yu Ju (Edwin) Chen

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## Skills

- Machine Learning, PCA, Numerical Linear Algebra, Numerical Optimization, Numerical Differential Equation, C++, Python, Matlab, Javascript, Typescript, CMake, Git, C#, Docker, CI/CD, NodeJs, React, Linux, Object-oriented design, Cloud services, Concurrency, Parallel Computing.

## Education

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

## Experiences

- Senior Researcher - Tencent America**, Los Angeles, CA *Feb 2022 - Present*  
As a researcher in the Game and AI team, I work on GPU-based numerical techniques for physically-based simulation.
- Research Software Engineer - Rapidia Tech Inc**, Vancouver, BC *July 2019 - Jan 2022*  
I was the lead for the software team, where we developed both software and firmware for our product. I worked on our software infrastructure and lead the development for our software tools, including a NodeJS electron app, an image processing based close-loop print quality control, and a thread-safe communication protocol for our furnace controller.
- Research Intern - Adobe Creative Technologies Lab**, Seattle, WA *May 2017 - Aug 2017*  
Supervisors : Danny Kaufman  
I investigated integrators for physical simulation with mass-PCA model reduction and published our work EigenFit at SCA 2019.

## Publication

- SIERE: A Hybrid Semi-Implicit Exponential Integrator for Efficiently Simulating Stiff Deformable Objects**  
Yu Ju Chen, Seung Heon Sheen, Uri M. Ascher, Dinesh K. Pai  
ACM TOG 2020
- EigenFit for Consistent Elastodynamics Simulation Across Mesh Resolution**  
Yu Ju Chen, David Levin, Danny Kaufman, Uri M. Ascher, Dinesh K. Pai  
Symposium on Computer Animation 2019
- Exponential Rosenbrock-Euler Integrators for Elastodynamic Simulation**  
Yu Ju Chen, Uri M. Ascher, Dinesh K. Pai  
IEEE TVCG 2017

## Teaching Experiences

- Teaching Assistant**
  - Computational Optimization (CS406)** *University of British Columbia* *Sep 2016 - Dec 2016*
  - Numerical Computation (CS302)** *University of British Columbia* *Sep 2014 - Dec 2014*
  - Numerical Approximation (CS303)** *University of British Columbia* *Jan 2015 - Apr 2015*
  - Computer Graphics (CS314)** *University of British Columbia* *Jan 2014 - Apr 2014*

## Awards

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- **PGSD** *University of British Columbia* *May 2016 - Apr 2019*
- **CGSM** *University of British Columbia* *Sep 2014 - Aug 2015*
- **Roy Nodwell Memorial Prize** *University of British Columbia* *Jan 2014 - Apr 2014*