

Charles Jin

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EDUCATION	Yale University , Aug 2012 - May 2016. Combined B.S./M.S. in Computer Science. B.S. in Mathematics, <i>with distinction</i> . GPA: 3.96/4.00.	
AWARDS AND HONORS	Schulz Prize , 2016. Awarded to a Silliman College senior for academic excellence in the physical sciences or mathematics. <i>summa cum laude</i> , Yale, 2016. Phi Beta Kappa, Yale, 2015. Moulton Ely Grant , 2014. Small grants that provide support for students in entrepreneurial endeavors. Sherwood E. Silliman Fellowship , 2013. Covered a 2-week collaboration at Case Western Reserve University. Yale College First-Year Summer Research Fellowship in the Sciences & Engineering , 2013. Awarded to approximately 70 students per year. Funded summer research on project "Image Segmentation of Dense Capillary Meshes."	
REFEREED PUBLICATIONS	Charles Jin , Muthu Baskaran. " Analysis of Explicit vs. Implicit Tasking in OpenMP using Kripke. " 4th Workshop on Extreme Scale Programming Models and Middlewear (held in conjunction with SuperComputing '18). (To appear.)	
PROJECTS AND MANUSCRIPTS	More Annihilating Attacks: an extension of MSZ16 , Fall 2015 - Spring 2016. M.S. thesis advised by Prof. M. Raykova at Yale University. <ul style="list-style-type: none">– Studied algebraic approaches to cryptographic obfuscation with a focus on constructions instantiated from multilinear maps.– Extended an annihilating attack (MSZ16) on indistinguishable obfuscation instantiated using candidate multilinear maps (GGH13) from a trivial branching program to a more general class. Code Generation Utility for Finite Field Arithmetic , Fall 2014 - Fall 2015. Independent project advised by Prof. B. Ford at Yale University. <ul style="list-style-type: none">– Built a code generation utility in Haskell for finite field arithmetic over Curve25519.– Demonstrated proof-of-concept for automatically generating primitives for elliptic curve cryptography over arbitrary primes without the need for hand-tuned optimizations. Image Segmentation of Dense Capillary Meshes , Spring 2013 - Spring 2014. Independent project advised by Prof. M. Choma, MD, at Yale School of Medicine. <ul style="list-style-type: none">– Used video and image segmentation techniques to isolate the capillary mesh of quail cell embryos in Matlab.	
TEACHING	Undergraduate Science and Quantitative Reasoning tutor at Yale University, Spring 2015 - Spring 2016.	
RELEVANT WORK EXPERIENCE	Reservoir Labs, Research Engineer , June 2018 - present. <ul style="list-style-type: none">– Designed and implemented compiler backends for OpenMP and Legion as well as a new lightweight runtime layer to enable automatic extraction of dynamic task-based parallelism. Currently extending support to GPUs (CUDA).	

- Evaluate performance of parallel programming models (e.g. OpenMP, Legion, Charm++, Kokkos, OCR) targeting exascale systems with heterogeneous architectures.
- Contribute to reports and papers, including grant proposals and reports.

Weiss Asset Management, Developer / Analyst, July 2016 - May 2018.

- Built Monte Carlo simulations that model financial derivatives; used in over \$100MM of decisions per year. Improved speed of existing Python PDE solver by 500x.
- Reimplemented critical trade reconciliation engine and application in a layered architecture, improving testability, robustness, and speed. Wrote test suite that exposed several major bugs from previous iteration.
- Managed coordination between software and investment teams, as the sole hybrid developer / analyst.

SELECTED OTHER ACTIVITIES

3rd Place, CSI CyberSEED Social Engineering Challenge, Oct 2015.

Capture-the-flag challenge to penetrate a fictitious company using techniques like social engineering, SQL injection, and buffer overflow attacks.

YHack, President and cofounder, Fall 2013 - Spring 2016.

Annual hackathon at Yale with over 1000 attendees. yhack.org

SeeMail, HackPrinceton 2013.

Used an automatically generated signature image to provide email read receipts. Featured in TechCrunch.