

Caleb Ju

Email: cju33@gatech.edu
Web: jucaleb4.github.io

EDUCATION

Georgia Institute of Technology 2020 –
Ph.D., Operations Research
Advisor: Professor Guanghui (George) Lan

University of Illinois Urbana-Champaign 2016 – 2020
B.S., Computer Science and Mathematics
Graduated with High Distinction

RESEARCH EXPERIENCE

Argonne National Laboratory, MCS Division 2021
Givens Associate
Advisors: Dr. Jeffrey Larson and Dr. Stefan Wild
Topic: Distributed numerical optimization routines for libEnsemble

University of Illinois, Department of Computer Science 2020
Summer Research Assistant
Advisors: Professors Chandra Chekuri and Edgar Solomonik
Topic: Parallel algorithms for mixed positive LPs

Laboratory for Parallel Numerical Algorithms 2018 – 2020
Undergraduate Research Assistant
Advisor: Professor Edgar Solomonik
Topic: Bilinear algorithms

PUBLICATIONS

1. **Caleb Ju**, Serif Yesil, Mengyuan Sun, Chandra Chekuri, Edgar Solomonik. *Efficient parallel implementation of the multiplicative weight update method for graph-based linear programs*. Submitted, Aug 2021.
2. Yan Li, **Caleb Ju**, Ethan X. Fang, Tuo Zhao. *Implicit regularization of Bregman proximal point algorithm and mirror descent on separable data*. arXiv, Aug 2021.
3. **Caleb Ju**^{*}, Yifan Zhang^{*}, and Edgar Solomonik. *Communication lower bounds for nested bilinear algorithms*. arXiv, Jul 2021.
4. **Caleb Ju** and Edgar Solomonik. *Derivation and analysis of fast bilinear algorithms for convolution*. SIAM Review, Nov 2020.

Asterisk denotes equal contribution.

PRESENTATIONS

1. Caleb Ju. *Decentralized Distributed Optimization for Sum of Convex Functions*. Summer Argonne Students Symposium (SASSy). 2021.
2. Caleb Ju and Navjot Singh. *Solving Positive LPs in Parallel using the Multiplicative Weights Update (MWU)*. UIUC Parallel Graph Algorithms Reading Group. 2020.

3. Caleb Ju. *Parallel approximate undirected shortest paths via low hop emulators*. UIUC Theory Seminar. 2020.
4. Caleb Ju and Edgar Solomonik. *Bilinear algorithms for convolution*. University of Illinois Summer Presentation Poster Symposium. 2019.

AWARDS AND ACHIEVEMENTS

Department of Energy Computational Science Graduate Fellowship	2021 – 2025
SIAM OP21 Travel Award	2021
Illinois Summer Research Poster: Best Research Presentation Award	2019
Franz Hohn and J.P. Nash Scholarship	2019
Kleiner Perkins Fellow Finalist	2019

WORK EXPERIENCE

Fivetran Software Engineering Intern, Backend	2018
AbbVie Lab Intern, Formulations Group	2017

TEACHING EXPERIENCE

Course Assistant: Algorithms	2020
Course Assistant: Intro to Algorithms and Models of Computation	2019

SKILLS

Programming: Python, C++, C, MATLAB, Java
 Libraries/Software: CUDA, NumPy, petsc4py, OpenMP, Gurobi, CPLEX, AWS