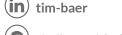# Tim Baer

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Education

BS | Computer Science & Math
University of Illinois | May 2022
Urbana-Champaign, IL
- CS GPA: 3.86
- Cumulative GPA: 3.73
- James Scholar

Coursework

Algorithms/Numerics
Parallel Numerical Algorithms*
Randomized Algorithms
Approximation Algorithms*
Tensor Computations
Algorithms
Introduction to Algorithms
Numerical Analysis
Data Structures

Systems
Parallel Programming
System Programming
Computer Architecture

Math
Abstract Linear Algebra (Honors)
Probability and Statistics*
Intro to Combinatorics*
Differential Equations
Fundamental Mathematics (Honors)

Skills

Languages
Advanced
C++
C
Python

Intermediate
Java
Javascript

General
Software
Docker • Kubernetes
MPI • OpenMP • CUDA
Jenkins • SonarQube • Jacoco
Git • LaTeX • Maven

Libraries
Numpy • Scipy • Boost
Node.js • Cyclops

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* Expected Fall 2021

Experience

C3.ai | Software Engineering Intern, Platform
Incoming Jun 2021 | Redwood City, CA

Laboratory for Parallel Numerical Algorithms | Research Assistant
Aug 2019 - current | Urbana-Champaign, IL
- Currently researching parallel approximate single source shortest paths
- Designed and implemented a distributed minimum spanning forest algorithm that outperforms the state of the art
- Developed a communication-efficient multilinear kernel to optimize a common type of graph update
- Presented multiple talks with a theme of graph algorithms and tensor algebra

IBM | Backend Software Developer Intern, Db2z Tools
Jun 2020 - Dec 2020 | San Jose, CA
- Integrated static/dynamic code analysis into CI pipeline to detect security issues
- Automated API and unit tests to improve code coverage by 85%
- Developed a new internal documentation tool

Software Design Studio | Course Assistant
Aug 2019 - May 2020 | Urbana-Champaign, IL
- Moderated weekly code review sessions focusing on best practices
- Graded and provided constructive feedback on C++/Java assignments
- Interviewed new hire candidates

All Information Services | Technology Intern
May 2019 – Aug 2019 | Oak Brook Terrace, IL
- Automated client workflow for file syncing with Microsoft Graph API
- Developed Flask app to integrate Slack with our service desk platform
- Leveraged NLP to automate classification of support ticket issue types

Introduction to Computer Science | Course Assistant
Jan 2019 - May 2019 | Urbana-Champaign, IL
- Facilitated a lab section with a teaching assistant to enhance lecture material
- Held office hours to debug students' programming assignments and provide additional support on an individual basis

Selected Projects (Non-Research)

Shopical: Shop Ethical
IBM Intern Hackathon 2020
- Developed mobile app that leverages ML to highlight harmful ingredients in consumer products in real-time
- Won 2nd place in the climate change division (126 teams across 3 divisions)

Evolution in the Stock Market
CS @ ILLINOIS Sail 2019
- Taught a class to 50+ high school students interested in computer science
- Developed a Jupyter notebook to apply genetic algorithms to real-time stock data

Self Driving Car Simulator
Fall 2018
- Implemented a "self-driving" car in GTAV with computer vision
- Integrated a deep learning algorithm to identify pedestrians and vehicles