Christopher M. Moretti

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CURRENT POSITION

◇ **Princeton University**, Princeton, NJ.
Senior Lecturer. Department of Computer Science. Fall 2022 – present
Lecturer. Fall 2010 - Spring 2022

EDUCATION

◇ **University of Notre Dame**, Notre Dame, IN.
Ph.D. in Computer Science and Engineering, 2010.
Dissertation: *Abstractions for Scientific Computing on Campus Grids.*
M.S.CSE in Computer Science and Engineering, 2007.
Thesis: *Flexible Object Based Filesystems for Scientific Computing.*

◇ **College of William and Mary**, Williamsburg, VA.
B.S. *magna cum laude* in Computer Science, 2004.

RESEARCH INTERESTS

◇ Computer Science Education.
◇ Cooperative and Distributed Computing and Storage.

FOCUS PROJECTS

◇ Princeton undergraduate curricular enhancement (previously branded as LIFT-CS).
Spring 2016 – present.

◇ Undergraduate independent work supervision.
Fall 2011 – present.

◇ Abstractions for distributed scientific computing workloads.
Summer 2007 – Spring 2010. Advisor: Douglas Thain.

◇ Using object-storage techniques for a metadata-based distributed filesystem.
Summer 2005 – Spring 2007. Advisor: Douglas Thain.

TEACHING HISTORY

◇ **Courses as Primary Instructor of Record or Preceptor**

· COS 217: Introduction to Programming Systems.
2025 Spring
2024 Fall   (precept evaluation 4.7/5)
2024 Spring (lecture evaluation 4.3/5)
2023 Fall   (precept evaluation 4.7/5)
2023 Spring (lecture evaluation 4.4/5)
2022 Fall   (lecture evaluation 4.1/5)
2022 Spring (precept evaluation 4.6/5)
2021 Fall   (precept evaluation 4.3/5)
2021 Spring (precept evaluation 4.1/5) – online
2020 Fall   (lecture evaluation 4.2/5) – online
2020 Spring (lecture evaluation 4.0/5) – online
2019 Fall   (precept evaluation 4.9/5)
2011 Spring (precept evaluation 4.8/5)
2010 Fall   (precept evaluation 4.6/5)

· COS 326: Functional Programming.

    2018 Fall   (precept evaluation 4.5/5)
    2017 Fall   (precept evaluation 4.7/5)
    2016 Fall   (precept evaluation 4.6/5)
    2015 Fall   (precept evaluation 4.4/5)
    2014 Fall   (precept evaluation 4.3/5)
    2013 Fall   (precept evaluation 3.9/5)

· COS 126: Computer Science: An Interdisciplinary Approach.

    2018 Spring (precept evaluation 4.5/5)
    2012 Fall   (precept evaluation 4.7/5)
    2012 Spring (precept evaluation 4.7/5)
    2011 Fall   (precept evaluation 4.2/5)

· COS 333: Advanced Programming Techniques.

    2016 Spring (student feedback: 4.4/5)

· EG 10112: Introduction to Engineering Systems. 2010 Spring.

◇ **Courses as Secondary co-Instructor or Teaching Assistant**

· COS 333: Advanced Programming Techniques. 2013-2015,2017,2019 Spring.

· CSE 20211: Fundamentals of Computing. 2008 Fall.

· CSE 60111: Algorithms and Complexity. 2006 Spring.

· CSE 30151: Theory of Computing. 2005 Spring.

· CSE 30331: Data Structures. 2004 Fall.

JOURNAL PAPERS (5)

◇ A Framework for Scalable Genome Assembly on Clusters, Clouds, and Grids
C. Moretti, A. Thrasher, L. Yu, M. Olson, S. Emrich, D. Thain
in *IEEE Transactions on Parallel and Distributed Systems, 2012.*

◇ Harnessing Parallelism in Multicore Clusters with the All-Pairs, Wavefront, and Makeflow
L. Yu, **C. Moretti**, A. Thrasher, S. Emrich, K. Judd, D. Thain in *Cluster Computing, 2010.*

◇ Middleware Support for Many-Task Computing
I. Raicu, I. Foster, M. Wilde, Z. Zhang, A. Szalay, K. Iskra, P. Beckman, Y. Zhao, Al. Choudhary, P. Little, **C. Moretti**, Am. Chaudhary, D. Thain in *Id.*

◇ All-Pairs: An Abstraction for Data Intensive Computing on Campus Grids
C. Moretti, H. Bui, K. Hollingsworth, B. Rich, P. Flynn, D. Thain
in *IEEE Transactions on Parallel and Distributed Systems, 2010.*

◇ Chirp: A Practical Global Filesystem for Cluster and Grid Computing
D. Thain, **C. Moretti**, J. Hemmes in *J. of Grid Computing, 2009.*

PEER-REVIEWED CONFERENCE AND WORKSHOP PAPERS (12)

◇ Teaching CS to CS Teachers: A Case for Content-focused K-12 Professional Development
D. Leyzberg, **C. Moretti** at *SIGCSE 2017, Seattle.*

◇ Nailing the TA Interview: Using a Rubric to Hire Teaching Assistants
D. Leyzberg, J. Lumbroso, **C. Moretti** at *ITiCSE 2017, Bologna.*

◇ Highly Scalable Genome Assembly on Campus Grids
C. Moretti, M. Olson, S. Emrich, D. Thain at *MTAGS '09, Portland.*

◇ Harnessing Parallelism in Multicore Clusters with the All-Pairs and Wavefront Abstractions
L. Yu, **C. Moretti**, S. Emrich, K. Judd, D. Thain at *HPDC '09, Munich.*

◇ The Quest for Scalable Support of Data Intensive Workloads in Distributed Systems
I. Raicu, I. Foster, Y. Zhao, P. Little, **C. Moretti**, A. Chaudhary, D. Thain at *Id.*

◇ Scaling Up Classifiers to Cloud Computers
C. Moretti, K. Steinhaeuser, D. Thain, N.V. Chawla at *ICDM '08, Pisa.*

◇ All-Pairs: An Abstraction for Data-Intensive Cloud Computing
C. Moretti, J. Bulosan, D. Thain, P. Flynn at *IPDPS'08, Miami.*

◇ Efficient Access to Many Small Files in a Filesystem for Grid Computing
D. Thain, **C. Moretti** at *GRID07, Austin.*

◇ Challenges in Executing Data Intensive Biometric Workloads on a Desktop Grid
C. Moretti, T. Faltemier, D. Thain, P. Flynn at *PCGRID '07, Long Beach*

◇ Lessons Learned Building TeamTrak: An Urban/Outdoor Mobile Testbed
J. Hemmes, D. Thain, C. Poellabauer, **C. Moretti**, P. Snowberger, B. McNutt at *WASA 2007, Chicago.*

◇ Transparently Distributing CDF Software with Parrot
D. Thain, **C. Moretti**, I. Sfiligoi at *CHEP 06, Mumbai.*

◇ The Consequences of Decentralized Security in a Cooperative Storage System
D. Thain, **C. Moretti**, P. Madrid, P. Snowberger, J. Hemmes at *SISW 2005, San Francisco*

BOOK CHAPTERS (2)

◇ Abstractions for Cloud Computing with Condor
D. Thain, **C. Moretti** in *Cloud Computing and Software Services, 2009.*

◇ Towards Data Intensive Many Task Computing
I. Raicu, I. Foster, Y. Zhao, A. Szalay, P. Little, **C. Moretti**, A. Chaudhary, D. Thain in *Data Intensive Distributed Computing: Challenges for Large-Scale Information Management, 2009.*

INTERNAL AND EXTERNAL FUNDING

◇ Improvements to the Computer Science Intro LabTA Program for COS 217
McGraw Center for Teaching and Learning, under review (2025) with Xiaoyan Li.

◇ UCA support for development of a new COS 217 assignment
Keller Center, $2,762 (2020).

◇ Biology-specific and Collaborative Self-paced Precept Materials for COS 126
Council on Science and Technology, $14,000 (2020) with Soohyun Nam Liao.

◇ Advanced Topics Summer Professional Development Workshop for High School CS Teachers
Google CS4HS, $35,000 (2016) with Dan Leyzberg.

UNDER-GRADUATE PROJECT ADVISING

◇ Alex Slisher - Princeton University. 2024-2025 Senior Thesis.
COS 126 Through the Lens of Astrophysics.

◇ Caroline Coen - Princeton University. 2024-2025 Senior Thesis.
ML Classification of Biblical Translations across Languages and Literary Categories.

◇ Alfred Ripoll, IV - Princeton University. 2024-2025 Senior Thesis.
Timing the Game: How the MLB Pitch Clock Changes the Game.

◇ Mason Tate - Princeton University. 2024-2025 Senior Thesis.
Analysis of Volleyball Defensive Positioning Informed by Object Classification.

◇ Max Steinert - Princeton University. 2024-2025 Senior Thesis.
ML Classification of Soccer National Team Styles of Play.

◇ Alfred Ripoll, IV - Princeton University. Spring 2024 JIW.
Analyzing MLB Draft Prospect Performance with ML Techniques.

◇ Andrew Tutuc - Princeton University. 2023-2024 Senior Thesis.
Towards a Position-Specific WAR Model for International Soccer.

◇ Mackenzie Merriman - Princeton University. 2023-2024 Senior Thesis.
A Machine Learning Approach to Predicting Franchise Valuations.

◇ Nasko Tenev - Princeton University. 2022-2023 Senior Thesis.
Personal Finance Literacy Game.

◇ Dylan Snyder - Princeton University. 2021-2022 Senior Thesis.
Discord Bots for Automating SimpleMMO Administration.

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⋄ AJ Kawczynski - Princeton University. 2021-2022 Senior Thesis.
Statistics and Machine Learning Methods for Evaluating Pitching Change Decisions.

⋄ Justin Yi - Princeton University. 2021-2022 Senior Thesis.
Gamification for Campus Orientation and Acclimatization.

⋄ Rohan Joshi - Princeton University. Spring 2021 SIW.
Web Platform for Medical Tourism.

⋄ Raymond Park - Princeton University. 2020-2021 Senior Thesis.
Web platform for mentoring international applicants to US colleges.

⋄ Robbie Freeman - Princeton University. Spring 2020 SIW.
ML Workflows for Using Aggregate User Data in Sports Media.

⋄ Christine Kwon - Princeton University. Spring 2020 JIW.
Accessibility Tools for Campus Software Development.

⋄ Ilene E - Princeton University. Spring 2020 JIW.
Accessibility Tools for Campus Software Development.

⋄ Rod Joseph - Princeton University. 2019-2020 Senior Thesis.
A Content-Based Language Learning Tool.

⋄ Hari Raval - Princeton University. Fall 2019 JIW.
Bag of Words - Natural Language Processing Assignment for COS 126.

⋄ V. Abebe, Khandaker M., K. Rauwe - Princeton University. 2019 SPE.
Simple Games Productivity App. (Co-advisor: D. Leyzberg)

⋄ Ricki Heicklen - Princeton University. 2018-2019 Senior Thesis.
Curriculum development and delivery of a prison computer science teaching initiative.

⋄ Dominic Whyte - Princeton University. Fall 2018 SIW.
Repunch - An end-to-end system for modernizing loyalty punchcards.

⋄ Michael Kim - Princeton University. Fall 2018 SIW.
DAPZ - The non-Dating App.

⋄ Mikako Inaba, Anja Tonkovic-Capin - Princeton University. 2018 SPE.
Localized study groups app.

⋄ Matthew Yeh - Princeton University. Spring 2018 JIW.
A Tool for Autograding Assignments in POL345.

⋄ Rani Jaiswal - Princeton University. 2017-2018 Senior Thesis.
Continuous adaptive color-blindness accessibility software.

⋄ Cam Porter - Princeton University. 2017-2018 Senior Thesis. (Co-advisor: G. van der Vink)
Systematic Target Market Identification using Weak Signal Analysis.

⋄ Zhan Chen - Princeton University. 2017-2018 Senior Thesis.
A web visualization engine for e-sports team composition.

⋄ Claire Chiu - Princeton University. Fall 2017 JIW.
Automated Scheduling for the Performing Arts Council.

⋄ Sally Lemkemeier - Princeton University. Fall 2017 JIW.
Evaluating Q&A Platforms for Educational Purposes.

⋄ Simisola Olofinboba - Princeton University. Fall 2017 JIW.
ReserveSpace: Princeton's One-Stop-Destination for Scheduling Needs.

⋄ A. Chu, V. Deokar, M. Jiang - Princeton University. 2017 SPE.
Location-aware events app using React Native and Firebase.

⋄ Ethan Cohen - Princeton University. Spring 2017 JIW.
End-game strategies that optimize winning outcomes for 20 years of NBA play-by-play data.

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◇ Harry Heffernan - Princeton University. Spring 2017 JIW.
Using player coordinate data to build metrics for soccer analytics.

◇ L. Peña, V. Davidjohn, R. Morkos - Princeton University. 2016 SPE.
An environmentally conscious Unity3D game. (Co-advisor: L. Roberts)

◇ Jack Hudson - Princeton University. Spring 2016 SIW.
Tiger Treats: Development and Policy Analysis of a Local Minor Gift Service.

◇ Ben Leizman - Princeton University. Spring 2016 JIW.
Integrated iOS and Web Scorekeeping for Squash and Other Sports.

◇ Abhinav Khanna - Princeton University. Fall 2015 SIW.
Building a Trust Network for Cancer Patients.

◇ Catherine Morrison - Princeton University. Fall 2015 SIW.
Summer Stay - A Web Application to Aid in the Short-Term Housing Search.

◇ Matthew Wang - Princeton University. Spring 2015 JIW.
Python Pieces - Bridging the gap in Python education environments.

◇ Richard Freling - Princeton University. Spring 2015 JIW.
Pronto: A localized micro-task app for iPhone.

◇ Matthew Colen - Princeton University. Spring 2015 JIW.
Exploring theoretical bounds in football result prediction.

◇ Jamie Smith - Princeton University. 2014-2015 Senior Thesis.
Speaker identification in non-studio environments.

◇ Valentina Barboy - Princeton University. 2014-2015 Senior Thesis.
Analysis and Expert System Design for Course Scheduling.

◇ Jonathan Neilan - Princeton University. 2014-2015 Senior Thesis (inc).
Stackframe Visualizer for COS217 Programs.

◇ Cole McCracken - Princeton University. Fall 2014 JIW. (Co-advisor: Mark Braverman)
Machine learning models for sports betting markets.

◇ Samuel Jordan - Princeton University. Fall 2014 JIW.
Mobile app for campus geotracking and artifact collection.

◇ Parth Mehta - Princeton University. Fall 2014 JIW.
Code editing interface for the Dart programming language.

◇ I. Ingato, E. Bradley, R. Aguilar - Princeton University. 2014 SPE.
Facebook scrapbook application with face recognition functionality.

◇ Reed Tantiviramanond - Princeton University. Spring 2014 JIW.
Exposing a Local Filesystem-Like Interface for Remote Dropbox File Operations.

◇ Brendan Wright - Princeton University. Spring 2014 JIW.
Algorithms for Player selection in Fantasy Hockey Pools.

◇ Virginia Willis - Princeton University. Spring 2014 JIW.
Volleyball Analytics.

◇ Jacob Lee - Princeton University. Spring 2014 JIW.
Design and Implementation of a Squash Coaching App for IPad.

◇ Rahji Abdurehman - Princeton University. Fall 2013 JIW.
Software and numeric analysis of Bradley-Terry comparison in NCAA hockey rankings.

◇ A. Gallagher, O. Bradley-Skill, K. Koutras - Princeton University. 2013 SPE.
Web infrastructure for Princeton independent work workflows.

◇ Brian Matejek - Princeton University. Spring 2013 JIW.
Software and analysis for identifying and optimizing sports gambling arbitrage opportunities.

⋄ Jae Young Lee - Princeton University. Spring 2013 JIW.
Software for web analysis of NBA statistical repositories.

⋄ Austin Walker - Princeton University. 2012-2013 Senior Thesis.
Fault tolerance, file encryption, and fairness policies for the Chirp filesystem.

⋄ Dylan Bowman - Princeton University. Fall 2012 JIW.
Smart learning: Spaced repetition software for the iPhone.

⋄ Jimmy Zuber - Princeton University. SPE 2012.
Java environment for evolution simulation.

⋄ Willa Chen - Princeton University. 2011-2012 JIW. (Co-advisor: Susan Sugarman)
JavaScript development environment for adolescent computer science education.

⋄ David Mittelman - University of Connecticut. Summer 2009 REU. (Under Douglas Thain)
Distributed computing on small mobile devices.

⋄ Jared Bulosan - University of Notre Dame. Summer 2007 REU. (Under Douglas Thain)
Designing web interfaces for harnessing distributed computing.

SERVICE

⋄ Computer Science master's program - Princeton University.
Admissions Reviewer: 2015–
Admissions Chair: 2016–

⋄ Computer Science placement officer - Princeton University. 2014–

⋄ Computer Science teaching faculty hiring committee - Princeton University. 2016–2020, 2022, 2024–2025.
Committee Chair: 2019, 2022

⋄ Computer Science UCA co-coordinator - Princeton University. 2023–2025

⋄ Computer Science representative on Princeton Lecturer Corps - Princeton University. 2025–

⋄ Computer Science teaching faculty promotion committee - Princeton University. 2022–2023

⋄ Computer Science curriculum committee - Princeton University. 2018–2021

⋄ Teaching faculty rep. to Schmidt Hall Executive Committee - Princeton University. 2020

⋄ ES+SEAS Commons and Library Working Group - Princeton University. 2019–2020

⋄ Computer Science space committee - Princeton University. 2016–2017

⋄ Computer Science BSE Advisor - Princeton University. Classes of 2017, 2021, 2024

⋄ SEAS BSE Freshman Advisor - Princeton University. Classes of 2016, 2017, 2021, 2028, 2029

⋄ Advanced Placement Exam Reader - ETS. 2014–
Leader 2016–

⋄ Advanced Placement Consulting - College Board and ETS. 2017–2018, 2023–

⋄ Reviewer and Session Chair - *ACM SIGCSE Symposium*

⋄ Reviewer and Associate Program Chair - *ACM ITiCSE*

⋄ PC - *Workshop on Many-Task Computing on Clouds, Grids and Supercomputers*

⋄ Reviewer - *IEEE Transactions on Parallel and Distributed Systems*

⋄ Reviewer - *IEEE Transactions on Services Computing*

⋄ Reviewer - *Workshop on Many-Task Computing on Grids and Supercomputers*

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⋄ Reviewer - *Journal of Parallel and Distributed Computing*

⋄ Reviewer - *Euro-Par*

⋄ Reviewer - *Parallel and Cloud Computing Research*

⋄ Reviewer - *MJCS*

AWARDS ⋄ Princeton University Engineering Council Excellence in Teaching Award for the School of Engineering and Applied Science (2016, 2022, 2023)

⋄ University of Notre Dame First Year Engineering Teaching Apprenticeship (2010)

⋄ Ateyeh Outstanding Graduate Teaching Assistant Award (2009)

⋄ Monroe Scholar of The College of William and Mary (2001–2004)

⋄ National Merit Scholar - SAIC (2001–2004)