

PHOEBE K. CHUA

Department of Informatics
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EDUCATION

University of California, Irvine, CA (Expected) June 2021

Ph.D. in Informatics

Data Science Certificate Program, (Expected) September 2017

Advisors: Gillian R. Hayes and Melissa Mazmanian

Messiah College, PA May 2016

B.A. in Mathematics with Triple Minors in Computer Science, Statistics, and Music, GPA 4.0 / 4.0

University and Departmental Honors

University of Oxford, United Kingdom December 2015

Oxford Study Abroad Program, Operations Research and Econometrics, GPA 4.0 / 4.0

RESEARCH EXPERIENCE

Graduate Student Researcher 2016 - Present

Department of Informatics, University of California, Irvine

Laboratory for Ubiquitous Computing and Interaction; Social and Technological Action Research Group

Advisors: Melissa Mazmanian and Gillian R. Hayes

Perceived Quality of Social Interactions among Parents and Teens (with Simone L. Simpson, Victoria L. Bredow, and Jina Hong)

DanceCraft (with Kate E. Ringland, Jamie Brown, Heather Faucett, and Krithika Jaganath)

Undergraduate Computer Science Researcher Summer 2015

Research Experiences for Undergraduates (REU) Program, Washington University in St. Louis

Advisors: Brendan Juba and Sanmay Das

Coordinated versus Decentralized Exploration in Multi-Agent Multi-Armed Bandits

Studied communication strategies in spontaneous teams, with applications to robotic disaster relief efforts. Implemented and evaluated online and communication algorithms using MATLAB.

Mathematically analyzed the fundamental limits of online and communication algorithms.

Undergraduate Mathematics Researcher Summer 2014

Research Experiences for Undergraduates (REU) Program, Pennsylvania State University

Advisor: Viorel Nitica

Classifying Intersections of Closed Conical Hemispaces (with Yinuo Zhang and Noah Kahrs)

Classified the intersections of max-plus closed conical hemispaces, with applications to optimization.

Implemented max-plus algorithms using Java and modeled conical hemispaces using Maple.

PROFESSIONAL EXPERIENCE

- User Experience Research and Content & Web Development Intern**, Tandemic, Malaysia Summer 2016
Advisors: Kal Joffres, Chelsey LePage, and Martin Tan
- Asia Pacific Youth Innovation Challenge** (with UNICEF)
Designed and implemented UNICEF's online innovation challenge that brought together 950+ youth and senior policymakers from 18 Asia-Pacific countries to promote children's rights
 - SEAGULL 2016** (with the Singapore Management University)
Trained undergraduate leaders from 11 Southeast Asian countries to apply design thinking and consultancy frameworks to address complex societal issues
- Group and Project Leader** 2013-2015
The Collaboratory for Strategic Partnerships and Applied Research, Messiah College
- Group Leader, Education Group** 2014-2015
Supervised four academic engagement projects on four continents that empower the lives of 400+ people from underserved communities. Awarded grants from the Whitaker Foundation and the Smith Scholarship Foundation.
 - Project Leader, Opportunities in Business and Educational Development** 2013-2015
Partnered with the Ruth Education Center, Malaysia, to create a professional development program that helps Burmese refugee youth in Malaysia improve their job prospects and build community. Funded by the Mulberry Foundation and Messiah College, this curriculum benefits 300+ refugees every year.
 - Project Member, Africa WASH and Disability Study** June 2013
Facilitated a workshop to promote disability awareness among World Vision Ghana staff and engineers. Conducted field work in Ghana with people with disabilities to facilitate assistive technology and business developments. Increased the potential adoption rates of accessible water tippers from 50% to 99% as well as latrine chairs from 40% to 89%.
- ## HONORS AND AWARDS
- Grace Hopper Celebration (GHC) Student Scholarship**, Anita Borg Institute and ACM 2017
 - PyCon Travel Grant** 2017
 - CRA-W Grad Cohort Workshop Travel Grant** 2017
 - Chair's Award**, University of California, Irvine 2016
 - Baccalaureate Student Speaker Competition Winner** (awarded to three students) 2016
 - Departmental Honors**, Dept. of Mathematics, Physics, and Statistics, Messiah College (only recipient) 2016
 - Dr. Dorothy Gish Women in Leadership Award**, Messiah College (awarded to five students) 2015
 - SGA Professional Development Grant**, Messiah College 2015
 - International Service-Learning Grant**, Mulberry Foundation 2015
 - Sigma Zeta National Science and Honors Society** 2013 - 2016
 - World Vision Service-Learning Grant** 2013
 - Trustee's Scholarship for Excellence**, Messiah College (awarded to six students) 2012 - 2016
merit-based full-tuition scholarship

Overall Best Student in Arts Stream , Methodist College Kuala Lumpur (only recipient) for performance in Further Mathematics, Mathematics, Physics, and Economics	2012
Outstanding Academic Achievement Award , Methodist College Kuala Lumpur for GCE A Level results: 4A* / 4A* (top 2% in the world)	2012
Best Student in Mathematics , Methodist College Kuala Lumpur (only recipient)	2012
Best Student in Economics , Methodist College Kuala Lumpur (only recipient)	2012
Special Scholarship , Methodist College Kuala Lumpur	2010 – 2012

CONFERENCE FULL PUBLICATIONS (PEER-REVIEWED)

- [C1] **Coordinated versus Decentralized Exploration in Multi-Agent Multi-Armed Bandits**
Mithun Chakraborty, Phoebe K. Chua, Sanmay Das, Brendan Juba
The International Joint Conference on Artificial Intelligence (IJCAI), February 2017
[acceptance rate: 26%]

CONFERENCE PRESENTATIONS

- [CP2] **Communication Strategies for Spontaneous Teamwork**
Phoebe K. Chua, Sanmay Das, Brendan Juba
School of Science, Engineering, and Health Symposium, Messiah College, April 2016
- [CP1] **Classifying Intersections of Closed Conical Hemispaces**
Phoebe K. Chua, Noah Kahrs, Yinuo Zhang, Viorel Nitica
Mathematical Association of America EPaDel Section Meeting, October 2014

POSTERS (LIGHTLY PEER-REVIEWED)

- [P2] **Empowering Zimbabwean Girls as Change Makers**
Marlene Mhangami, Phoebe K. Chua
PyCon, May 2017
- [P1] **Communication Strategies for Spontaneous Teamwork**
Phoebe K. Chua, Sanmay Das, Brendan Juba
Research Symposium at Washington University in St. Louis, August 2015

TECHNICAL SYSTEM IMPLEMENTATIONS

- [T6] **DanceCraft** (Processing)
Kate E. Ringland, Jamie K. Brown, Heather Faucett, Krithika Jaganath, Phoebe K. Chua, Kelly Ho
Kinect dance therapy program for children with autism. 2016
- [T5] **Asia Pacific Youth Innovation Challenge Website** (HTML, CSS, and WordPress)
Phoebe K. Chua, Myrra Baity
Website for youth to submit innovative ideas to promote children's rights. 2017.
- [T4] **3D Map** (HTML, CSS, JavaScript, and WebGL)
Phoebe K. Chua, Chung Z-Ean
Website with an interactive 3D campus map of Messiah College. 2016.
- [T3] **Block Blockers** (Processing)

Phoebe K. Chua, Jeffrey Daub, Von Bock

Physics game that teaches players the effects of gravity and friction on different sized blocks. 2015.

[T2] **Adventures with Dr. Rohrbaugh** (Prolog)

Daniel Baker, Phoebe K. Chua, Kyle Fischer

Text-based adventure game implemented using natural language processing. 2015.

[T1] **Winter Beater** (Python and Java)

Phoebe K. Chua

Interactive program that uses combinatorial optimization to determine the shortest route between buildings in Messiah College. 2014.

TEACHING EXPERIENCE

Summary

Graduate Teaching Assistant, University of California, Irvine 2016 – Present
Department of Informatics and the Department of Computer Science

Undergraduate Teaching Assistant, Messiah College 2012 – 2016
Department of Mathematics, Statistics, and Physics and the Department of Business
Conducted help sessions open to 670 students enrolled in any mathematics and statistics courses.
Assisted faculty with instructing labs, creating supplemental course materials, and grading.

Tutor, Methodist College Kuala Lumpur, Malaysia 2011 – 2012
Peer Assisted Learning Center
Tutored students in calculus, statistics, and economics.

Courses, Teaching Assistant

University of California, Irvine

Course Title	Course Number	# Students	Quarter
User Needs Analysis	IN4MATX 281 (MHCID)	25	Fall 2017
Information Retrieval	IN4MATX 141/COMPSCI 121	332	Spring 2017
Organizational Information Systems	IN4MATX 162W	59	Winter 2017
User Interaction Software	IN4MATX 133	105	Fall 2016

Messiah College

Course Title	Course Number	# Students	Semester
Decision Making Tools in Management	BUSINESS 356	32	Spring 2016
Decision Making Tools in Management	BUSINESS 356	40	Spring 2015
Mathematics of Growth	MATH 102	29	Spring 2015
Calculus I	MATH 111	24	Spring 2015
Applied Statistics for Management	STAT 281	29	J-Term 2015
Linear Algebra	MATH 261	29	Fall 2014
Calculus I	MATH 111	94	Fall 2014
Applied Mathematics for Management	MATH 107	53	Fall 2014
Mathematics of Growth	MATH 102	21	Fall 2014

Course Title	Course Number	# Students	Semester
Linear Algebra	MATH 261	28	Spring 2014
Calculus II	MATH 112	72	Spring 2014
Applied Mathematics for Management	MATH 107	51	Spring 2014
Linear Algebra	MATH 261	25	Fall 2013
Mathematics of Growth	MATH 102	20	Fall 2013
Linear Algebra	MATH 261	20	Spring 2013
Fundamentals of Chinese I	CHINESE 101	14	Fall 2012

Guest Lectures

Analysis and Testing of Interfaces. Guest lecture for Informatics 133, User Interaction Software. University of California, Irvine. November 2016.

MENTORING

Selected Positions

DECADE PLUS Leadership Coach, University of California, Irvine	2016 – 2017
Graduate InterConnect Peer Mentor, University of California, Irvine	Summer 2017
Graduate Student Writing Mentor, University of California, Irvine	Summer 2017
Competitive Edge Research Program Peer Mentor, University of California, Irvine	Summer 2017
International Student Programs Peer Advisor, Messiah College	2013 – 2015

Training

DECADE PLUS Leadership Coach Training Program, University of California, Irvine	2017
DECADE Mentoring Excellence Program, University of California, Irvine	2016

Graduate Mentoring

Minnie Wu, Ph.D. Informatics, Competitive Edge Summer Research Program	Summer 2017
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Undergraduate Mentoring

Lydia Wan, B.S. Economics, Messiah College	2014 – 2016
Jessica Sponsler, B.S. Business Administration, Messiah College	2014 – 2015
Rahel Schlogl, B.A. Mathematics, Messiah College	2013 – 2015
Elizabeth Barnes, B.S. Biopsychology, Messiah College	2013 – 2015

FUNDING

[F11] DECADE PLUS Mentoring Program , University of California, Irvine	\$2,800 2017 – 2018
[F10] GHC Student Scholarship , Anita Borg Institute and ACM	\$900 October 2017
[F9] PyCon Travel Funding	\$680 May 2017

[F8]	CRA-W Grad Cohort Workshop Travel Funding	\$670 April 2017
[F7]	Chair's Award , University of California, Irvine	\$2,500 2016
[F6]	Dr. Dorothy Gish Women in Leadership Award , Messiah College (awarded to five students)	\$400 2015
[F5]	SGA Professional Development Grant , Messiah College	\$300 May 2015
[F4]	International Service-Learning Grant , Mulberry Foundation	\$750 2015
[F3]	World Vision Service-Learning Grant	\$1,800 2013
[F2]	Trustee's Scholarship for Excellence , Messiah College (merit-based full-tuition scholarship awarded to six students)	\$114,560 2012 – 2016
[F1]	Special Scholarship , Methodist College Kuala Lumpur	\$3,700 2010 – 2012

SERVICE

Advisor , ZimboPy, Zimbabwe	2017 – Present
Mentor female Zimbabwean students to develop Python programs to address complex challenges in Zimbabwe	
Secretary , DECADE Engineering and ICS Student Council, University of California, Irvine	2016 – Present
Organize events and outreach activities to support women and underrepresented minorities receiving doctoral degrees at UC Irvine	
Treasurer , Multicultural Council; International Students Association, Messiah College	2013 – 2016
Managed an annual budget of \$30,000. Supervised five umbrella organizations—La Alianza Latina, Black Student Union, Asian Student Association, African Student Union, and the International Students Association—to promote diversity and inclusion. Organized the International Banquet, the largest student-run banquet on campus, for 400+ people.	
Assistant Advisor , Games Competition, Malaysian Care, Malaysia	2011
Organized educational games competitions for 200 Burmese refugee children and youths, involving more than 80 volunteers from various clubs and universities as well as funding from the United Nations High Commissioner for Refugees (UNHCR), the U.S. Embassy, and Hasbro	

MEMBERSHIPS

Association for Computing Machinery (ACM)	2017 – Present
Python Software Foundation	2017 – Present
Women in Information and Computer Science at the University of California, Irvine	2016 – Present
American Statistical Association	2013 – 2016
Mathematical Association of America	2012 – 2016