

Poramate Nakkirt

CONTACT INFORMATION	3406 Snedecor Hall Department of Statistics Iowa State University Ames, IA 50011-1090	(515) 214-9343 pnakk@iastate.edu
RESEARCH INTEREST	Biostatistics, Network meta-analysis, Statistical theory, Random matrix theory, Random graphs, Constraint satisfaction problems	
EDUCATION	Iowa State University, Ames, USA Ph.D. in Statistics	2021-present
	University of Colorado, Boulder, USA B.A. in Mathematics, <i>magna cum laude & distinction</i> Supervisor: Professor Sean O'Rourke	2016-2019
EMPLOYMENT AND INTERNSHIP	Data Scientist , King Mongkut's Institute of Technology Ladkrabang, Thailand <ul style="list-style-type: none">Analyzed large-scale data, developed policy for local officials	Feb 2021-Aug 2021
PUBLICATIONS AND PREPRINTS	<ul style="list-style-type: none">Deng, G., El Sai, E., Manders, T., Mayr, P., Nakkirt, P., Sparks, A., <i>Sandwiches for Promise Constraint Satisfaction</i>, Algebra Univers, Vol. 82, No. 25 (2021). [Article] [arXiv]Nakkirt, P., <i>The Eigenvalue Distribution of the Watts-Strogatz Random Graph</i>, submitted, preprint, arXiv:2009.00332v2 [math.PR], 2021. [arXiv]	
PROGRAMMING LANGUAGES	<ul style="list-style-type: none">Statistical tools: Python, R, JMP, SAS, Microsoft Office, MATLABReporting: L^AT_EX, Markdown, HTML	
STATISTICAL CONSULTING	Iowa State University <i>Consultant</i> , Statistics in the Community (STATCOM) Provide statistical consulting to Iowa local non-profits and governmental organizations	2021-present
HONORS AND AWARDS	Thailand Government Scholarship (Top 1 in selection) <i>Graduate program</i> <ul style="list-style-type: none">The Contract working as tenure-track faculty at the Department of Statistics, Naresuan University, Thailand after completing Ph.D. <i>Undergraduate program, One District One Scholarship</i> <ul style="list-style-type: none">Only one senior high-school student in the city	2021-present 2015-2019
	CU Boulder Research Experience for Undergraduates Funding Dean's List, College of Arts and Science	2019 2016-2019
	The American National Honors Society <i>Phi Beta Kappa</i> <i>Pi Mu Epsilon (National Math Honors Society)</i>	2019-present 2017-present

RESEARCH
EXPERIENCE

CU Boulder

Research Assistant, Universal Algebra Research Group, CU Boulder, 2019

Topic: *Sandwiches for Promise Constraint Satisfaction*

Supervisor: Professor Peter Mayr

- Explored examples of a PCSP over Boolean structures which reduces to a tractable CSP of size 3 but not smaller
- Proved properties of PCSPs that reduce to system of linear equations, or CSPs with semilattice and majority polymorphism

Researcher, Undergraduate Honors Thesis, CU Boulder, 2019

Topic: *Limiting Moments of the Eigenvalue Distribution of the Watts-Strogatz Random Graph*

Supervisor: Professor Sean O'Rourke

- Worked on coding algorithm for small-world random graphs, computing and simulating eigenvalues based on adjacency matrices, and conjecturing its distribution
- Proved first moment, second moment, and limiting third moment

Research Assistant, Math REU Summer Research, CU Boulder, 2019

Topic: *Promise and Constraint Satisfaction Problems (CSP)*

Supervisor: Professor Peter Mayr and Dr. Athena Sparks

- Proved the existence of smallest structure that reduces PCSP to a tractable CSP via sandwiches for semilattice
- Constructed an affine sandwiches

Research Assistant, Experimental Math Lab, CU Boulder, 2018

Topic: *Binomial Transform of Sequences*

Supervisor: Dr. Ilia Mishev

- Explored new integer sequences and its formulas by using binomial transform method
- Discovered *Inverse Binomial Transform of Apery numbers* (A322519), potentially added to **The On-Line Encyclopedia of Integer Sequences**
- Discovered negated sequences and invariant sequences defined by some particular recurrence relations
- Proved the properties of own inverse, negated, and invariant

Researcher, Math Kids Study Group, CU Boulder, 2018-2019

Topic: *Algebraic Geometry and problems of Sheaves*

Supervisor: Dr. Leo Herr

- Developed a foundation of knowledge of Algebraic Geometry
- Proposed new findings to other graduate students at the weekly meeting

TEACHING
EXPERIENCE

Iowa State University

Teaching Assistant (TA): leading a weekly Lab section and holding TA office hours

- STAT 101 Principles of Statistics Fall 2021
- STAT 326 Introduction to Business Statistics II Fall 2021

CU Boulder

Grader: grading weekly homework assignments for two class sections

- MATH 2020 Number Systems Fall 2019
- MATH 2001 Introduction to Discrete Mathematics Spring 2018
- MATH 1150 Pre-Calculus Fall 2016

	<i>Teaching Assistant (TA):</i> leading a recitation, planning weekly in-class activities, reviewing midterm and final exams, holding TA office hours.	
	• MATH 1150 Pre-Calculus	Spring 2019
	<i>Academic Tutor:</i> helping student's homeworks and exams for math courses	
	• The Mathematics Academic Resource Center	Spring 2019
INDEPENDENT STUDY SESSIONS	Random Matrices & Random Graphs for Research Level	Fall 2019
	• Advised by Professor Sean O'Rourke	
	Graduate-Level Probability Theory & Measure Theory	Spring 2019
	• Advised by Professor Sean O'Rourke	
	Topics in Binomial Transform of Sequences	Fall 2018
	• Advised by Dr. Iliia Mishev	
PRESENTATIONS AND POSTERS	<i>Sandwiches for Promise Constraint Satisfaction</i> , MAA MathFest, Undergraduate Poster Session, Denver, CO. (January 2020)	
	<i>Promise Constraint Satisfaction Problems</i> , Research & Innovation Week, CU Boulder (October 2019)	
	<i>Learning Assistance Poster</i> , Mentor and Noyce Scholars Poster Session, CU Boulder (April 2019)	
	<i>Binomial Transform of Sequences</i> , Research & Innovation Week, CU Boulder (October 2018)	
INVITED TALKS	<i>Making inspiration for improving English skills</i> , SP IDOL, Sriyapai School, Chumphon, Thailand (June 2020)	
	<i>Promise constraint satisfaction problem on n-coloring graphs</i> , Math Summer Research Seminar, CU Boulder (June 2019)	
	<i>Global Diversity of Englishes</i> , Diversity and Inclusion Summit, Program for Writing and Rhetoric, CU Boulder (November 2018)	
	<i>How to succeed in college</i> , SP IDOL, Sriyapai School, Chumphon, Thailand (May 2017)	
PROFESSIONAL MEMBERSHIPS	Statistics in the community (STATCOM)	2021-present
	STATers, organization for STAT graduate students	2021-present
	Institute of Mathematical Statistics	2020-present
	Mathematical Association of America (MAA)	2019-present
CONFERENCE AND SEMINAR PARTICIPATION	Statistics Graduate Program, Iowa State University	
	Graphics Group Seminar	2021-present
	Survey Working Group Seminar	2021-present
	Statistics Group Seminar	2021-present
	BLAST International Conference, CU Boulder	
	Foundation of Mathematics and Universal Algebras	May 2019
	Math Graduate Program, CU Boulder	
	Probability Seminar	2017-2019
	Algebra Seminar	2017-2019

SERVICES

International Festival Event, CU Boulder

Thailand cultural presentation(co-organizer) April 2019
The Royal boating ceremony and modern Thai dance(performer) April 2018
Local dance from four regions of Thailand(performer) April 2017
Thai Cultural Martial Art of Thai Boxing(performer) April 2016

Vice President of the Boulder Thai Student Association 2017-2019

Math Club, CU Boulder

Volunteer Co-Organizer on π Day event March 2017

REFERENCES

Dr. Sean O'Rourke, Assistant Professor of Mathematics, CU Boulder,
(303) 492-7716, sean.d.orourke@colorado.edu

Dr. Peter Mayr, Associate Professor of Mathematics, CU Boulder,
(303) 492-7754, Peter.Mayr@colorado.edu

Dr. Ilia Mishev, Lecturer of Mathematics, CU Boulder,
(303) 492-7679, Ilia.Mishev@colorado.edu