

DALYAPRAZ MANATOVA

ALSO KNOWN AS DALYA MANATOVA OR DALYAPRAZ DAULETBAK

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Bloomington IN

EDUCATION

PhD	Indiana University, Security Informatics	Aug 2020 - Active
	Luddy School of Informatics, Computing, and Engineering	
	<i>I study cybercrime and security vulnerabilities. In my studies, I seek to understand how e-crime works, develops, interacts with other domains, and how we can guard our data and online existence in the most efficient way. I am also an Associate Instructor teaching foundational knowledge for information security.</i>	
MS	Indiana University, Informatics of Cyber Security	2022
	California Institute of Technology, Non-degree program	2019
	<i>During my period at Caltech, I studied Applied Linear Algebra, Probabilistic Stochastic Models and how such mathematical approaches could be applied to interdisciplinary research. I was a selected student among other applied under Exchange Program at Caltech.</i>	
MS	California State University, Los Angeles, Information Systems	2019
BS	Nazarbayev University, Mathematics	2015
	School of Science and Technology Affiliated with Carnegie Mellon University	

TEACHING WORK EXPERIENCE

Associate Instructor	August 2020- Active
<u>Mathematics of Cybersecurity.</u>	Spring 2023
<i>This course is for students to be introduced to the basic mathematical and programming tools used in modern security research and practices. The course covers introductory material from a number of disparate fields including functional programming, probability theory, analysis of algorithms, complexity theory, number theory, and group theory.</i>	
Luddy School of Informatics, Computing, and Engineering, Indiana University, Bloomington IN	
<u>Economics of Information Security.</u>	Fall 2022
<i>The seminar course on economic measures of cybercrime and interactions between instantiations involved in cybercrime, where I help students navigate their understanding of the latest research and a philosophical view on cybercrime. The course also discusses the basics of risk perception, usability, and rational evaluation of risk in e-crime and privacy and how they play a role in cybercrime at different scopes.</i>	
Luddy School of Informatics, Computing, and Engineering, Indiana University, Bloomington IN	
<u>Capstone class- Design and Development of Information Systems.</u>	Fall 2020, Spring 2021
<i>The capstone class focuses on teaching senior students a complete cycle of system building in teams, where I help them figure out their forming start-up ideas into feasible and usable computer systems with user evaluation, front-end and back-end development, and testing. One of the teams I was leading won a Top Project Recognition Award 2021.</i>	
Luddy School of Informatics, Computing, and Engineering, Indiana University, Bloomington IN	

Graduate Teaching Assistant

Fundamentals of Computer Information Systems

Fall 2018, Spring 2019

The class teaches the fundamentals of IT and information management in the real world. As a teaching assistant, I developed assignments and quizzes to ensure their understanding of the material.

College of Business and Economics, California State University, Los Angeles CA

Volunteering Project Tutor

Data Science Class

Fall 2019, Spring 2020

The class is a project-based interactive learning experience where I, as a tutor, showed how to build an analysis on the dataset and program prediction modeling for a specific goal. At the end of each class, students present their findings and report their chosen methods. I provided my feedback and evaluation of readiness for interviews for data science-related jobs.

Data Application Lab, Los Angeles CA

INDUSTRIAL WORK EXPERIENCE

Research Security Operations Center, Bloomington IN

Sept 2021 – Aug 2022

Research Assistant

- Responsible for ensuring a valuable and secure environment and enclave for operational security data sharing between research infrastructures under the shared cybersecurity operations center.
- Responsible for discovering and exploring operational data sharing practices in highly confidential domains for research advancement.
- Discovered and advanced Security Vulnerability Assessment and Management techniques in a shared cybersecurity operations center for education and research.

IT Security Department at California State University, Los Angeles CA

Aug 2019 – Sept 2020

Cybersecurity Data Analyst

- Responsible for establishing a centralized tool for tracking unprotected data and file storing incidents on devices and computers in the network.
- Responsible for advancing and improving the security filtering system for identifying any anomaly behaviors in the accounts in the network.
- Responsible for improving and clearing detection of illegitimate and phishing emails received daily in the network.
- Developed a centralized reporting system for ensuring confidentiality of files and data on network's machines.

City of Los Angeles and Big Data AI Center, Los Angeles CA

Jan - Jun 2019

Data Science Fellow

- As a research fellow, was responsible for analyzing road traffic dataset to provide a historical analysis of traffic jams in LA County, that will help manage the recourses more effectively grounded by historical and behavioral analysis.
- Developed a data representation system for analyzing past traffic incidents in geospatial dimension aggregated by time and date.
- Developed a data transmission architecture for analyzing voluminous datasets and supporting analytical algorithms.
- Responsible for researching most suitable algorithmic solutions to predict road traffic based on specific time and location conditions.

KPMG, Central Asia & Kazakhstan

Apr 2016 - Jan 2018

Senior Consultant/Data Analyst at Strategic and Operational Management

- Developed visualization tool of Inventory Flows for National Railway company.
- Developed Supply Inventory Data Cube for National Railway company.
- Developed data model for costing and pricing.
- Developed methodological approaches for forming tariff estimates.
- Developed technical specifications for automation, selection and implementation of complex IT solutions.

PwC, Kazakhstan

Aug 2015 - Apr 2016

Tax Consultant

- Developed an automated tool for individual tax reporting for foreign workers under special conditions.
- Responsible for advising and consulting on tax practices for foreign workers under special conditions.
- Responsible for negotiating and resolving conflicts and issues arising between Tax Department and client.

NULits, Kazakhstan

Jan - Aug 2015

UI & UX consultant for Nazarbayev University student portal

- Developed and advised on a user interface for student portal at the official college website.
- Developed and conducted a user experience study for testing major features for student portal.
- Initiated and developed an online electronic student government election on the student portal.

PUBLICATIONS

Dalyapraz Manatova, Charles DeVries and Sagar Samtani. 2023. Hacker Forum Communities: Inquiry Framework for Identification, Analysis and Evaluation of Community Detection Algorithms for Cyber Threat Intelligence. *Decision Support Systems* [in review]

Dalyapraz Manatova, Dewesha Sharma, Sagar Samtani, and Jean L. Camp. 2022. Exploring Social Network of Trust Across Major Crime Types in an Underground Forum. *APWG Symposium on Electronic Crime Research (eCrime APWG 2022)*. Association for Computing Machinery, [in publication]

Dalyapraz Manatova, Inna Kouper, and Sagar Samtani. 2022. Designing a Vulnerability Management Dashboard to Enhance Security Analysts' Decision-Making Processes. *In Practice and Experience in Advanced Research Computing (PEARC '22)*. Association for Computing Machinery, New York, NY, USA, Article 56, 1–4. <https://doi.org/10.1145/3491418.3535176>

Dalyapraz Dauletbak, Junghoon Heo, Sooyoung Kim, Yeon Pyo Kim, Jongwook Woo. 2021. Scalable Traffic Predictive Analysis using GPU in Big Data. *CoRR* abs/2106.15151

Dalyapraz Dauletbak and Jongwook Woo. 2020. Big Data Analysis and Prediction of Traffic in Los Angeles. *KSII Transactions on Internet and Information Systems*, 14, 2, (2020), 841-854. DOI: 10.3837/tis.2020.02.021.

Conference/Poster Presentations and Talks:

APWG (Anti-Phishing Working Group) Symposium on Electronic Crime Research – “Exploring Social Network of Trust Across Major Crime Types in an Underground Forum”, December 2022, Remote on APWG.

Cybersecurity Summer Institute at GeorgiaTech - “Social Network of Crimes on Dark Web”, August 2022, Atlanta, GA

PEARC22 Interact! - “Vulnerability Management Dashboard to Enhance Security Analysts’ Decision-Making Processes”, July 2022, Boston, MA

PEARC22 Interact! - “Visualizing the Vulnerability Landscape of Major Scientific Cyberinfrastructure GitHub Ecosystems”, July 2022, Boston, MA

Teradata Analytics 2019 - “Big Data systems and Machine Learning model for Traffic Analysis in LA”, October 2019, Denver, Colorado

The 14th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2019) - “Traffic Data Analysis and Prediction using Big Data”, June 2019, Beijing, China

SWRC (South Western Regional Conference) - “Waze Traffic Data Analysis and Prediction using Big Data”, April 2019, Irvine, CA

Third Stanford WiDS (Women in Data Science) Local Conference at CSULA - “Waze Traffic Patterns in LA County”, March 2019, Los Angeles, CA

27th Annual Student Symposium on Research, Scholarship, and Creative Activities at California State University of Los Angeles - “Waze Traffic Patterns in LA County”, February 2019

27th Annual Student Symposium on Research, Scholarship, and Creative Activities at California State University of Los Angeles - “Measuring Awareness of Cloud Security Threats: A Twitter Sentiment Analysis”, February 2019

Cyber Security & Awareness Competition at Cal Poly Pomona - “Measuring Awareness of Cloud Security Threats: A Twitter Sentiment Analysis”, October 2019

COMMUNITY SERVICE

Undergraduate Research Opportunities in Computing (UROC), Bloomington IN

Research mentor

Sept 2022 – Active

I teach and guide undergraduate students in research topics where they have to establish a small research project and conduct an empirical study. Currently, I work with a student helping her to find out how the Russian cybercriminal group responsible for massive ransomware attacks manages its team and find key contributors to different aspects of the successful operational cyberattack.

Design Thinking Class at CSU, Los Angeles CA

‘Girls Education in Nepal’ Project Mentor for MSIS & MBA students

Sept 2021 – Dec 2021

I mentored a team of master's students on developing an education platform for managing student success and providing learning tools in an environment without internet connectivity. The team's report can be found [here](https://medium.com/edustars/rukmini-online-learning-management-system-fa6aa3d0a0b4). [https://medium.com/edustars/rukmini-online-learning-management-system-fa6aa3d0a0b4]

IU Center of Excellence for Women & Technology (CEW&T), Bloomington IN
Research Mentor for Research Experiences for Undergraduate program Sept 2021 – May 2022

I mentored, guided and evaluated the progress of young women in their research projects, where they had to initiate a research interest, study and importance of their topic. At the end of the academic year student developed a study design and implications for two topics: Privacy Concerns of Learning Analytical Tools, Mental Models of Ransomware Victims.

SheLovesData, Los Angeles CA
Volunteering Python Instructor May 2019 – Aug 2021

I developed educational materials and lectured free Python and SQL programming workshops for women who wish to advance their careers but don't have the resources to learn coding.

International Data Engineering and Science Association (IDEAS), Los Angeles CA
Community Manager Nov 2018 – Aug 2020

I was responsible for reaching out to leading experts and researchers to share their expertise on Data Science and Blockchain during weekly online talks (free). I also hosted these talks most Saturdays, where for a one-hour conversation, I (IDEAS host) and a guest speaker would discuss the guest's work and research topic. In such talks, we would seek to bridge the gap between industry and academia, answering questions from both perspectives.

HONORS, AWARDS, FELLOWSHIPS

Ostrom Fellowship for 2023-2024 aimed to research polycentric approach to cybercrime governance and cybersecurity 2023

Travel Support Award for 2023 IEEE Conference on Secure and Trustworthy Machine Learning, Raleigh NC 2023

Travel Scholarship Support for Student Presentations at the Professional and Academic Conferences, California State University, Los Angeles CA 2019

Teradata 2019 Analytics Challenge Honorable Paper, Denver CO 2019

Selected Student at Development Program at California Institute of Technology - California State University at Los Angeles, CA 2019

Outstanding Paper Award at the 14th Asia Pacific International Conference on Information Science and Technology, Beijing China 2019

Recognition as ASI Outstanding Achievement in Professional & Public Service at California State University, Los Angeles CA 2019

Bravo Award at KPMG Central Asia for a considerable contribution to the work in the project on categorical inventory management analysis for National Railway Company 2017

Full Educational Grant at Nazarbayev University, Kazakhstan 2011-2015