



Institute for Data Science



Institute hosts NJBDA Workshop on "Smart Ports"

On April 4th the NJBDA Smart Ports Workshop was hosted by the Institute for Data Science with notable speakers in the field to discover the benefits and opportunities for innovation in the port systems. Beth Rooney, Port Director at the Port Authority of NY & NJ kicked off the workshop followed by Dennis Monts, Chief Operations Office for Advent eModal, and the event concluded with Anne Strauss-Wieder, Director, Freight Planning at North Jersey Transportation Planning Authority. To view the live stream [click here](#).

OVERVIEW:

- Student & Faculty Updates
- New Advisory Board Member Joins
- NJBDA Symposium May 9th

Pages 02 - Student Updates

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Pages 06 & 07 - Faculty Updates



Ying Wu College of Computing Programming Team Holds Their Own at Annual ICPC Competition

written by: Michael Giorgio

[Link to Article](#)

Two teams of NJIT Cheetahs and Tigers entered the lion's den of the leading collegiate programming contest in the world and left with pride for placing in the upper half among some of the top institutions in the New York region at the annual International Collegiate Programming Contest (ICPC).

Jaden Nguyen, president of Ying Wu College of Computing's (YWCC) Programming Club, and his five fellow student members, most of whom are freshmen and sophomores, traveled with nervous anticipation to Sacred Heart University in Fairfield, Conn. for this year's event to join a total of 76 teams comprised largely of third and fourth-year students from high profile institutions including Cornell, Columbia, Princeton, and Yale.

ICPC hosts over 3,000 universities from 111 countries in 400 on-site competitions. Winning teams in the regionals advance to compete in the national finals and a world championship. As such, the battle is nothing less than fierce.

The contest involves what Nguyen calls "brain teasers requiring fundamental programming skills and creative thinking." Teams, three to a computer, must attempt to solve 10 problems of varying difficulty - from easy to extremely challenging - during a 5-hour period. [continued.](#)

INSTITUTE ACTIVITIES

HiPC 22'

Bengaluru, India
December 18-21st, 2022

David Bader presented at the 30th IEEE International Conference on High Performance Computing, Data, & Analytics. The meeting focused on two areas High Performance Computing (HPC) and Scalable Data Science.



Speaking Engagements:

Indian Institute of Science Bangalore Hosts David Bader for Seminar

David Bader was invited to speak at the Indian Institute of Science Bangalore and hosted by the Department of Computer Science and Automation. The seminar titled "Solving Global Grand Challenges with High Performance Data Analytics" was held on December 21st. To learn more [click here](#).



Welcome Erez Agmoni New Advisory Board Member



Erez Agmoni
Global Head of Innovation (Logistics & Services)
Maersk

Dr. Erez Agmoni is the Global Head of Innovation for Maersk and after many years in Israel, Asia, and Latin America he is now based in New Jersey, USA. In this current role, Erez is heading the Maersk Innovation Center which contains 4 pillars: R&D, Digital Innovation, Product Innovation, and Data Innovation. On top of that, the Innovation Center is building eco-systems that contain internal stakeholders, customers, academia, government, and venture capital players. Erez has a broad industry experience of more than 25 years in supply chain management, freight forwarding, logistics, engineering, and digital innovation which he utilized to develop complex solutions that improve end-to-end supply chains. Erez is holding a computer engineering bachelor's degree, a telecommunication science master's degree, and a Ph.D. in organization development. Erez is married with three children and enjoys traveling, hiking, and mountain biking in his spare time. Erez enjoys meeting and learning new cultures and can speak Hebrew (native), English & Thai fluently and he is at a beginner level in Japanese.



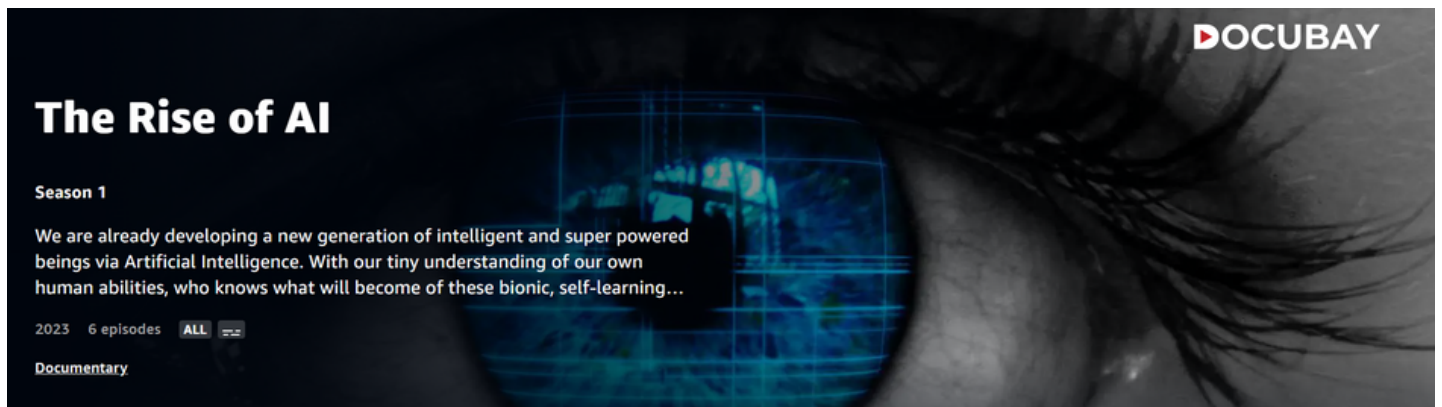
INSTITUTE ACTIVITIES

Sigma Xi Distinguished Lecturer 2023–2024

[Link to Announcement](#)

David Bader has been selected as Sigma Xi Distinguished Lecturer. For the 85th year, Sigma Xi presents its panel of Distinguished Lecturers as an opportunity for chapters to host visits from outstanding individuals who are at the leading edge of science. These visitors communicate their insights and excitement on a broad range of topics.

Additional support for the program comes from the American Meteorological Society. Lecturer biographies, contact information, and additional details can be found online at sigmaxi.org/lectureships or by sending an email to lectureships@sigmaxi.org.



David Bader Part of Docuseries on Prime Video

You can see David Bader and other experts in Data Science try to answer the questions about AI what it is and where it is headed. The series covers a number of topics including how AI brains are researched and developed, real-time analytics driving AI, the ethics of AI, and what the future holds for issues of privacy.



FACULTY UPDATES

Paper Awards & Submissions

AAAI 2023 Distinguished Papers

Faculty Member Hai Phan from the Data Science Department was recently awarded AAAI 2023 Distinguished Paper. Hai Phan's paper titled "XRand: Differentially Private Defense against Explanation-Guided Attacks" was one of twelve papers selected out of 8,777 papers submitted. The AAAI Conference Papers Awards and Recognition honors papers that exemplify the highest standards in technical contribution and exposition. To learn more about the awards presented [click here](#).

Best Paper Award at the 9th IEEE SDS-2022

Hai Phan's paper "Un-Fair Trojan: Targeted Backdoor Attacks Against Model Fairness" has won the Best Paper Award at the 9th IEEE International Conference on Software Defined Systems. To learn more about this conference [click here](#).

IEEE PerCom 2023

Continuing crucial works in bringing Trustworthy AI/ML to real-world adoption Hai Phan's paper was recently accepted at the IEEE PerCom 2023, a leading venue in pervasive computing and communications. [Learn More](#).

26th AISTATS 2023

Paper submitted by faculty member Hai Phan was accepted at the 26th AISTATS 2023 (one of the four leading venues in AI and ML). [Learn More](#).

Qualcomm Collaboration with Ying Wu College of Computing Brings Privacy-Preserving Machine Learning

written by: Michael Giorgio
[link to article](#)

Imagine a digital system that could predict physical and mental health conditions among college students based on early symptoms and quickly connect them to counseling and psychological services on campus. While a seemingly obvious application of IoT (Internet of Things) technology, the implementation of such a system would need to avoid exposing and storing sensitive health data along the way, which could run afoul of relevant federal laws and compromise user privacy. A system developed by NJIT researchers and Qualcomm Technologies Inc. is now able to do this by ensuring that the privacy-sensitive student data never leaves the end-users' devices during the entire process and all raw data processing is done on the devices. This is achieved using federated learning, which runs a decentralized AI model between the end-user devices and the cloud, without the need to share user data with the cloud.

A three-year collaboration between Qualcomm Technologies, a multinational wireless technology corporation, and Ying Wu College of Computing's Cristian Borcea and Hai Phan (faculty in the departments of computer science and data science respectively) has led to the inventions of Federated Learning System (FLSys) and Zone Federated Learning (ZoneFL), the first end-to-end, mobile-cloud federated learning (FL) systems that work effectively on smart phones. Federated Learning System provides practical, efficient, scalable and privacy-preserving FL for data collected on mobile devices. Zone Federated Learning is the team's next-level enhancement that adapts FL models to mobility behavior in different geographical zones. Both findings have the potential to transform how user-based mobile information, such as accelerometer, heart rate, etc., are leveraged in novel applications of machine learning, while protecting the privacy of user data. Descriptions of these systems were recently published in IEEE Transactions on Mobile Computing and presented at the 21st IEEE International Conference on Pervasive Computing and Communications (PerCom 2023). [Continue Reading](#).

NJBDA 10th Annual Symposium

**BIG DATA
IN FINTECH**

MAY 9, 2023
8:30 AM - 3:30 PM

*Seton Hall University
Bishop Dougherty University Center*

KEYNOTES

KJERSTEN MOODY CHIEF DATA OFFICER OF PRUDENTIAL FINANCIAL

STEPHEN WARD MANAGING DIRECTOR, INSIGHT PARTNERS

GEORGE CALHOUN DIRECTOR OF THE QUANTITATIVE FINANCE PROGRAM AND THE HANLON FINANCIAL SYSTEMS CENTER AT STEVENS INSTITUTE OF TECHNOLOGY

EXPLORING THE DYNAMIC ROLE OF **BIG DATA IN THE EVOLVING FINTECH SECTOR**

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WORKSHOPS

*AI/Machine Learning for FinTech
Data Assets and Privacy
Entrepreneurship in FinTech
Workforce Development for FinTech
Cryptocurrencies and Risk Management*



ACADEMIC RESEARCH SESSIONS WITH PRESENTATIONS



NETWORKING

**POST SYMPOSIUM RECEPTION
3:30 - 5 PM**

Chancellor's Suite, University Center

REGISTER www.NJBDA.org

Event sponsored by the US Economic Development Administration

INSTITUTE FOR DATA SCIENCE DIRECTOR'S OFFICE



DAVID BADER

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