Dear Faculty, Students & Alums

We have had a very busy October, seminar talks, open houses for both the CS and DS programs, student job fairs had all taken places. While looking forward to another great month of November, we have a few notes to bring up to your attention:

- On **Friday Nov. 22nd**, we will have a faculty meeting to go through CS PhD student progress. A kind reminder to the faculty, please kindly RSVP for the event at [https://www.eventbrite.com/e/78213240909](https://www.eventbrite.com/e/78213240909) Or email Prof. Ping Ji if you could not make it;
- On **Monday Dec. 16th**, between 5:40pm to 9:00pm we will have an alum networking event in the Skylight room. To all alums of the CS and DS programs, please use the following link to RSVP for the event [https://www.eventbrite.com/e/7974139493](https://www.eventbrite.com/e/7974139493). An official invitation card will also be sent to you shortly.
- **Alum award nomination:** The GC is soliciting nominations for alum awards. Please feel free to nominate your former students or self nominate by sending an email to Prof. Ping Ji by **November the 25th**.

We appreciate you taking the time to read our newsletter. Please notify us if you wish to include your work in our next issue.

**PAST EVENT HIGHLIGHTS**

**October 10-11, 2019: IEEE Communication Society Distinguished Lecturer Tour**

A two day lecture series by Prof. Yi Qian from the department of Computer & Electrical Engineering at University of Nebraska-Lincoln.
1. Cellular based V2X Communications- A discussion on recent development and challenges on 4G LTE and 5G mobile wireless network to support efficient V2X communications.
2. Data Driven Network Intelligence for Anomaly Detection - A talk on summarizing the current development and challenges of network intelligence for anomaly detection.

**October 17, 2019: Domain Specific Architectures for Deep Neural Networks**

A talk by Turing Award winner David Patterson, reviewing the Tensor Processing Unit TPUv1 and exploring how Google built the first production DSA super computer for much harder problem of training, which was deployed in 2017.

**October 17, 2019 : Ph.D. in Computer Science Open House**

An opportunity for all prospective students to come and learn more about our Ph.D Program in Computer Science and meet with our faculty to get a better understanding on the course and research opportunities. Over 40 prospective students came to the event, and 10 faculty members presented their research. The program brochure and faculty research booklet were printed and distributed. The open house was very successful and well received.

**October 25, 2019 : Meet & Greet of current Master Students**

M.S. Program in Data Science hosted a meet & greet with the Executive Officer Prof. Ping Ji and Deputy Executive Officer Prof. Mikael Vejdemo-Johansson for the current masters students to share their experience and concerns.
**October 25, 2019 : M.S. in Data Science Open House**

A great opportunity for the prospective students to get know about GC and our master’s program from all its sides. Students also had the opportunity to mingle with faculty members and current student representatives of the data science program.

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**RECENT NEWS**

**Prof. Yingli Tian won FG’19 Test of Time Award** - The paper entitled Comprehensive Database for Facial Expression Analysis (FG2000) with authors Takeo Kanade, Jeffrey F. Cohn, & Yingli Tian received the FG’19 Test of Time Award. The Test of Time Award from IEEE International Conference on Automatic Face and Gesture Recognition (FG) recognizes the author or authors of an influential paper published between fifteen and twenty years ago that has significantly impacted research on face and gesture recognition.

**Prof. Neng-Fa Zhou won top prizes in the 2019 XCSP solver competition** - PicatSAT system developed by Neng-Fa Zhou took the first place in both the CSP and COP categories of the main track in the 2019 XCSP competition. Detailed results are available here: [XCSP3 Competition 2019 Results](#).

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**WEEKLY SEMINARS**

**DATA SCIENCE & APPLIED TOPOLOGY SEMINARS:**

**October 04, 2019 : Topology and Machine Mind - Prof. Russ Waller** - Using standard tools from topological data analysis and basic notions from topology, exploring new ways of understanding how a machine-learning algorithm utilizes the data it is given.

**October 11, 2019 : Computing Minimal Presentations and Bigraded Betti Numbers of 2-Parameter Persistent Homology - Prof. Michael Lesnick** - Motivated by applications to topological data analysis, giving an algorithm for computing a (minimal) presentation of a bigraded \(K[x,y]\)-module \(M\), where \(K\) is the field.

**October 18, 2019 : Cellular Sheaves, Discrete Hodge Theory, and Applications - Prof. Jakob Hansen** - This talk outlines the construction of cellular sheaves and their Laplacians, and sketch various avenues for their application to realistic engineering and scientific problems.

**October 25, 2019 : Singularity in Data Analysis - Prof. Steven Ellis** - Broad classes of statistical methods have topological obstructions of continuity: They must have singularities. This talk showed why and gave lower bounds on the Hausdorff dimension, even Hausdorff measure, of the set of singularities of such methods.

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**CATEGORY THEORY SEMINARS:**

**October 10, 2019 : Towards complete spreads for higher toposes - Prof. Jonathan Weinberger** - A seminar on the variation of the synthetic theory that allows for additional constructions such as opposite categories and twisted arrow spaces. The approach is crucially based on Licata--Riley--Shulman’s fibrational framework for modal type theories. Furthermore, the work suggests a notion of synthetic co/cartesian fibrations, based on Riehl--Shulman’s work on synthetic discrete co-contravariant fibrations.

**October 16, 2019 : Higher-Order Categorical Logic: Adjoint Functors - Prof. Jaime Piedra**

Discussion on section 0.3 from the book Introduction to Higher-Order Categorical Logic by J. Lambek and P.J. Scott.
**ALUM SPOTLIGHT**

Dr. Jonathan Gryak is the Industry Liaison for MIDAS. He is also an Assistant Research Scientist in the Department of Computational Medicine and Bioinformatics at the University of Michigan. Dr. Gryak’s research focuses on the development and application of machine learning and data science techniques to computational medicine, as well as the development of algebraic cryptographic systems. In addition to his academic work, Dr. Gryak has worked for both private and public entities as a network engineering and cybersecurity consultant, and was previously the Infrastructure Manager of the Westport Public Schools in Westport, CT.

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**PUBLICATIONS**


Dr. Alexander Wood is a Research fellow of University of Michigan, who is committed to research, design, & development of computational solutions to challenging problems. He applies his computational skills in collaboration with medical experts in order to develop efficient and effective commercial products in the medical field.

**GC ALUMNI AWARD NOMINATION**

GC will celebrate the tremendous contributions that our alumni have made to their field and society at large with our 2020 GC Alumni Awards. Nominate your candidates for the Alumni Achievement Award, Graduate of the Last Decade (GOLD) Award, and the CUNYAward. **Please email your nomination to Prof. Ping Ji.**

We look forward to sharing more monthly highlights of developments at the department with more exciting seminars, events, and important announcements. For more updates, check us out on Facebook, Twitter, and the department website!