

**JSPS US ALUMNI ASSOCIATION SEMINAR PROGRAM
REPORT**

Organizer (Awardee)

Name: Raffi Khatchadourian

Position & Affiliation: Assistant Professor, City University of New York (CUNY) Hunter College

1. TITLE OF SEMINAR New York Seminar on Programming Languages and Software Engineering (NYPLSE 2019)
2. DATE(S) February 25, 2019
3. VENUE & CITY, STATE CUNY Hunter College, New York, NY
4. TARGETED RESEARCH AREAS (1) Programming Languages (2) Software Engineering (3) Cybersecurity
5. NUMBERS OF PARTICIPANTS TOTAL: <u>26</u> persons including <u>2</u> US Alumni Association members -US: <u>25</u> persons -FROM OVERSEAS: <u>1</u> person(s) including <u>1</u> person(s) from Japan

NOTES FOR REPORT

Executive Summary

The first New York Seminar on Programming Languages and Software Engineering (NYPL 2019) was held on February 25, 2019, at City University of New York (CUNY) Hunter College, New York, NY. The Japan Society for the Promotion of Science (JSPS) US Alumni Association seminar program, CUNY Hunter College, Women in Technology and Entrepreneurship in New York (WiTNY), and the CUNY Institute of Computer Simulation, Stochastic Modeling and Optimization (CoSSMO) graciously supported the seminar. The single day event featured a keynote talk by Dr. Shigeru Chiba of the Computer Software Group at the University of Tokyo, an invited talk by Baishakhi Ray of Columbia University, and an information session by JSPS regarding their programs to increase collaboration between the US and Japan.

The seminar's targeted research areas included programming languages (PL), software engineering (SE), and cybersecurity, particularly concerning PL and SE. The goal was to bring together researchers in these areas to foster collaboration and interaction and to engage students in research endeavors, and to make each other aware of each other's work.

We had ten talks with several format options, including conference-style, positions or new ideas, and tool demonstrations to discuss current research and results in programming languages and systems. The event was free, and participants included students, researchers, professors, and industry professionals. Speaker affiliations included Bell Labs, Nokia, Columbia University, CUNY Graduate Center, Google, New York University, North Carolina State University, Princeton University, SRI International, SUNY Binghamton, and the University of Tokyo. Seven speakers were from academia, while three speakers were from industry.

Topics Discussed with Outcomes & Future Challenges

Forty percent of the talks were on software engineering, fifty percent on programming languages, and ten percent spanning both programming languages and software engineering. Ten percent of the talks also overlapped with cybersecurity. Slides for several of the talks are available on [our website](#).

Also discussed was a research exchange between the US and Japan. This topic was mainly discussed during the JSPS International Program Information Session, which was held in the early afternoon. Yasuke Nakashima from the JSPS US office lead the session, highlighting the many opportunities sponsored by JSPS that allow researchers from the US to interact with those in Japan. Various fellowships were presented, and a group discussion about how to meet Japanese researchers as potential hosts took place.

Future challenges varied for each of the talks. Several of the challenges included determining the best way to formalize properties of fluid Application Programming Interfaces (APIs), how to deal with large-scale software engineering for long-lived projects like Google Search, and whether security engineers and software engineers can work together to produce more secure software.

Seminar Agenda

Start Time	End Time	Event	Presenter
8:30 AM	9:00 AM	Breakfast, registration, networking	
9:00 AM	9:15 AM	Introduction	Raffi Khatchadourian (CUNY Hunter College)
9:15 AM	10:15 AM	Keynote: A library with a fluent API or an embedded domain-specific language?	Shigeru Chiba (University of Tokyo)
10:15 AM	10:45 AM	Break	
10:45 AM	11:10 AM	Designing Self-Certifying Compilers	Kedar Namjoshi (Bell Labs, Nokia)
11:10 AM	11:35 AM	Software Engineering Principles at Google	Shaindel Schwartz (Google)
11:35 AM	12:00 PM	Weak-Consistency Specification via Visibility Relaxation	Michael Emmi (SRI International)
12:00 PM	1:00 PM	Lunch	
1:00 PM	1:45 PM	Invited Talk: Leveraging Big Code to Improve Software Reliability	Baishakhi Ray (Columbia University)
1:45 PM	2:10 PM	Data Flow Refinement Type Inference	Zvonimir Pavlinovic (New York University)
2:10 PM	2:35 PM	Application-Level Energy Accounting with	Anthony Canino (SUNY Binghamton)

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2:35 PM	3:05 PM	Break	
3:05 PM	3:35 PM	JSPS International Program Information Session	Yusuke Nakashima (JSPS)
3:35 PM	4:00 PM	Exploiting Abstract Interpretation for Model Checking Programs	Gilbert Pajela (CUNY Graduate Center)
4:00 PM	4:25 PM	How Is Software Security Engineering Different from Software Engineering?	Justin Smith (North Carolina State University)
4:25 PM	4:50 PM	Direct Reflection for Free!	Joomy Korkut (Princeton University)
4:50 PM	5:00 PM	Closing	Raffi Khatchadourian (CUNY Hunter College)

NYPLSE '19



NEW YORK SEMINAR ON PROGRAMMING LANGUAGES AND SOFTWARE ENGINEERING

February 25, 2019, CUNY Hunter College (sponsored by JSPS US Alumni Association)

Welcome to NYPLSE 2019!

- Welcome to the 1st JSPS-sponsored New York Seminar on Programming Languages and Software Engineering (NYPLSE 2019)
- Sponsored by:
 - Gold:
 - The Japan Society for the Promotion of Science (JSPS) US Alumni Association seminar program.
 - Silver:
 - CUNY Hunter College.
 - Women in Technology and Entrepreneurship in New York (WITNY)
 - Bronze:
 - CUNY Institute of Computer Simulation, Stochastic Modeling and Optimization (CoSSMO).



WITNY Women in Technology and Entrepreneurship in New York



NYPLSE

**New York Seminar on Programming Languages and
Software Engineering 2019**

WHEN

**February 25th
8:30am – 5pm**

WHERE

**Hunter West 3rd
Floor Glass
Cafeteria**

695 Park Ave, NY 10065

FEATURING Keynote by Dr. Shigeru Chiba, Computer
Science group at the University of Tokyo & Talk by
Dr. Bikashi Ray, Columbia University

[HTTPS://CUNY.IS/NYPLSE](https://cuny.is/nyplse)

**TICKETS ARE
FREE FOR ALL**

**ADVANCE
TICKETS ONLY**
CUNY.IS/NYPLSE

**REGISTER BY
FEBRUARY 17TH**

FOCUS

Talks covering a wide
array of research areas
include programming
languages (PL),
software engineering
(SE), and cybersecurity,
particularly concerning
PL and SE

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