Jae Woo Lee

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Current Position and Research Interests

Senior Lecturer in Computer Science
Associate Chair for Undergraduate Education
Department of Computer Science, Columbia University

Operating Systems, Networks, Software Engineering, Computer Science Education

Education

Columbia University, Graduate School of Arts and Sciences, New York, NY
Ph.D., Computer Science, May 2012
Advisor: Henning Schulzrinne

Columbia University, School of Engineering and Applied Science, New York, NY
M.S., Computer Science, May 2006

Columbia University, Columbia College, New York, NY
B.A., Physics, May 1994

Teaching

COMS W3157 Advanced Programming, Columbia University (2008 - present)
Fall 2024 website: `https://cs3157.github.io/www/2024-9/`

COMS W4995 Advanced Systems Programming, Columbia University (2024 - present)
Fall 2024 website: `https://cs4157.github.io/www/2024-9/`

COMS W4995 C++ for C Programmers, Columbia University (2021 - 2023)
Summer 2023 website: `https://c2cxx.github.io/www/2023-5/`

COMS W4118 Operating Systems I, Columbia University (2014 - 2023)
Spring 2023 website: `https://cs4118.github.io/www/2023-1/`

COMS W3136 Essential Data Structures in C/C++, Columbia University (2013 - 2016)
Fall 2016 website: `https://www.cs.columbia.edu/~jae/3136/`

Current Services

Academic Committee, Chair
Department of Computer Science, Columbia University

Director of Undergraduate Studies for Computer Science
Columbia College & General Studies, Columbia University

Teaching Faculty Recruiting Committee, Voting Member
Department of Computer Science, Columbia University

TA Assignment Committee, Voting Member
Department of Computer Science, Columbia University

Undergraduate Faculty Advisor
Department of Computer Science, Columbia University

Awards

SEAS Alumni Association Distinguished Faculty Teaching Award.
Established by Columbia Engineering Alumni Association in 1996, the award is presented annually by the Board of Managers in recognition of excellence in teaching and dedication to undergraduate students. 2016.

The Best Classes Ever.
Classes To Take Before You Die I Mean Graduate.
COMS W3157 Advanced Programming is listed as one of "The Best Classes Ever" (2012) and "Classes To Take Before You Die I Mean Graduate" (2014) among all undergraduate classes by the Bwog, which is the blog incarnation of The Blue and White, Columbia University's monthly undergraduate magazine. 2012, 2014.

Columbia University Presidential Teaching Award.
Honors the best of Columbia's teachers for the influence they have on the development of their students and their part in maintaining the University's longstanding reputation for educational excellence. 2011.

Andrew P. Kosoresow Memorial Award for Excellence in Teaching and Service.
Given to a PhD student in Computer Science who has performed exemplary service to the department, devoting time and effort beyond the call to further the department's goals. 2009.

Invited Talks, Demos and Tutorials

Tutorial: Quick and Easy Network Service and Packet Processing using NetServ
11th GENI Engineering Conference (GEC11) – Denver, CO, July 2011.
12th GENI Engineering Conference (GEC12) – Kansas City, MO, November 2011.

Demonstration: NetServ on GENI
Plenary session of the 9th GENI Engineering Conference (GEC9)
Washington, D.C., November 2010.

Panelist: Future Network Architectures
24th IEEE Annual Computer Communications Workshop (CCW)
Lake Arrowhead, CA, October, 2010.

Publications

Future Internets Escape the Simulator
Mark Berman, Piet Demeester, Jae Woo Lee, Kiran Nagaraja, Michael Zink, Didier Colle, Dilip Kumar Krishnappa, Dipankar Raychaudhuri, Henning Schulzrinne, Ivan Seskar, Sachin Sharma
Communications of the ACM, June 2015.

Flexible Network Address Mapping for Container-based Clouds
Kyung-Hwa Kim, Jae Woo Lee, Michael Ben-Ami, Hyunwoo Nam, Jan Janak, Henning Schulzrinne
IEEE NetSoft (short paper), London, United Kingdom, April 2015.

Finding 9-1-1 Callers in Tall Buildings
Wonsang Song, Jae Woo Lee, Byung Suk Lee, Henning Schulzrinne
IEEE WoWMoM, Sydney, Australia, June 2014.

CCNxServ: Dynamic Service Scalability in Information-Centric Networks
Suman Srinivasan, Amandeep Singh, Dhruva Batni, Jae Woo Lee, Henning Schulzrinne, Volker Hilt, Gerald Kunzmann
IEEE ICC, Ottawa, Canada, June 2012.

Extending the NetServ autonomic management capabilities using OpenFlow
Emanuele Maccherani, Mauro Femminella, Jae Woo Lee, Roberto Francescangeli, Jan Janak, Gianluca Reali, Henning Schulzrinne
IEEE/IFIP NOMS (short paper), Maui, Hawaii, USA, April 2012.

NetServ: Reviving Active Networks
Jae Woo Lee, Roberto Francescangeli, Wonsang Song, Emanuele Maccherani, Jan Janak, Suman Srinivasan, Michael Kester, Salman Baset, Henning Schulzrinne
Technical Report, CUCS-001-12, January 2012.

An Enabling Platform for Autonomic Management of the Future Internet
Mauro Femminella, Roberto Francescangeli, Gianluca Reali, Jae Woo Lee, Henning Schulzrinne
IEEE Network, vol.25, no.6, pp.24-32, November 2011.

Future Internet Autonomic Management Using NetServ
Mauro Femminella, Roberto Francescangeli, Gianluca Reali, Jae Woo Lee, Wonsang Song, Henning Schulzrinne
IEEE LCN (demo), Bonn, Germany, October 2011.

NetServ: Active Networking 2.0
Jae Woo Lee, Roberto Francescangeli, Jan Janak, Suman Srinivasan, Salman Baset, Henning Schulzrinne, Zoran Despotovic, Wolfgang Kellerer
IEEE ICC, FutureNet IV workshop, Kyoto, Japan, June 2011.

Polygon Simplification for Location-Based Services Using Population Density
Wonsang Song, Jae Woo Lee, Henning Schulzrinne
IEEE ICC, Kyoto, Japan, June 2011.

0 to 10k in 20 seconds: Bootstrapping Large-scale DHT networks
Jae Woo Lee, Henning Schulzrinne, Wolfgang Kellerer, Zoran Despotovic
IEEE ICC, Kyoto, Japan, June 2011.

Follow the River and You Will Find the C
Jae Woo Lee, Michael Kester, Henning Schulzrinne
ACM SIGCSE, Dallas, Texas, USA, March 2011.

GRAND: Git Revisions As Named Data
Jan Janak, Jae Woo Lee, Henning Schulzrinne
Technical Report, CUCS-047-11, March 2011.

NetServ: Dynamically Deploying In-network Services
Suman Srinivasan, Jae Woo Lee, Eric Liu, Mike Kester, Henning Schulzrinne, Volker Hilt, Srini Seetharaman, Ashiq Khan
ACM CoNEXT, ReArch workshop, Rome, Italy, December 2009.

mDHT: Multicast-augmented DHT Architecture for High Availability and Immunity to Churn
Jae Woo Lee, Henning Schulzrinne, Wolfgang Kellerer, Zoran Despotovic
IEEE CCNC, Las Vegas, Nevada, USA, January 2009.

SIP URI Service Discovery using DNS-SD
Jae Woo Lee, Henning Schulzrinne, Wolfgang Kellerer, Zoran Despotovic
IETF Internet-draft (work-in-progress), July 2008.

Bootstrapping Large-scale DHT Networks
Jae Woo Lee, Henning Schulzrinne, Wolfgang Kellerer, Zoran Despotovic
ACM CoNEXT, Student workshop, New York, NY, USA, December 2007.

z2z: Discovering Zeroconf Services Beyond Local Link
Jae Woo Lee, Henning Schulzrinne, Wolfgang Kellerer, Zoran Despotovic
IEEE GLOBECOM, SUPE workshop, Washington DC, USA, November 2007.

Professional Experience

Senior Application Developer, 2003
Amaranth Advisors, Greenwich, CT
Developed tools for US Credit and Convertibles desk at a hedge fund.

Co-founder and CTO (MyRisk.com), Senior Developer (DirectAdvice), 1999-2002
MyRisk.com, Inc., New York, NY / DirectAdvice, Inc., Hartford, CT
Co-founded MyRisk.com, a company to provide risk analytics over the Internet.
Sold company in November 2000 to DirectAdvice, Inc.

Consultant, 2000
Droplets, Inc., New York, NY
Developed PictureShare, a collaborative photo album application.

Senior Developer, 1997-1998
Tempest Software, Inc., New York, NY
Wrote Java client library for company's message-oriented middleware system.

Developer, 1994-1997
Inventure, Inc. (formerly Fenics Software Inc. and Astrogamma, Inc.), New York, NY
Developed features of FENICS, a foreign exchange option pricing software.