Jae Young Bang, PhD

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Education

University of Southern California: ..... Los Angeles, CA, USA

5/2015 **Doctor of Philosophy** in Computer Science
Dissertation: Proactive Detection of Higher-Order Software Design Conflicts
Advisor: Prof. Nenad Medvidovic

University of Southern California: ..... Los Angeles, CA, USA

5/2010 **Master of Science** in Computer Science

Soongsil University: ..... Seoul, Republic of Korea

6/2008 **Bachelor of Engineering** in Computer Science

Work History

University of California Irvine: ..... Irvine, CA, USA

1/2022 – present **Lecturer**: Teaching *Software Design: Structure and Implementation*, INF 122, Department of Informatics, Donald Bren School of Information and Computer Sciences.

Quandary Peak Research:..... Los Angeles, CA, USA

3/2019 – present **Senior Computer Scientist**: Performing software analysis, quality evaluation, design comparison, reverse engineering, cost estimation, and failure investigation for (1) software litigation including patent and copyright infringement, theft of trade secrets, breach-of-contract, etc., and (2) due-diligence for startup investments, acquisition, and mergers.

Kakao Corporation:..... Seoul Capital Area, Republic of Korea

6/2015 – 2/2019 **Software Engineer / Researcher**: Designing and implementing the user identity platform used by over 100 million users of the Kakao services such as KakaoTalk the messaging app. Responsible systems including:

- Kakao Account: user authentication system for all Kakao services
- Biz Account: authentication system for Kakao's business partners
- The anti-abuser and anti-spammer system
- The personal information and privacy protection system

University of Southern California: ..... Los Angeles, CA, USA

5/2009 – 5/2015 **Research Assistant**: Led the collaborative software design research as the primary scientist, publishing 7 first-authored academic papers and submitting one US patent application as a result. Also played a major role in the reliability of large-scale distributed software systems research and the data security in the Android platform research at USC.

University of Southern California: ..... Los Angeles, CA, USA

1/2014 – 12/2014 **Teaching Assistant** (USC CSCI 578: Software Architecture)

Infosys Limited: ..... Bangalore, Karnataka, India

6/2012 – 8/2012 **Graduate Research Intern**: Conducted a large-scale empirical study as a member of Infosys Labs on collaborative software design by surveying and interviewing practicing software architects at Infosys.

Technical Vetting / Due Diligence Consulting

HotelPlanner + Reservations.com Merger with Astrea - SPAC .....6/2021 – 8/2021

Technologies: Hospitality Management Systems

Enoviq ..... 3/2021 – 5/2021

Technologies: Insurance Management Systems

Big Capital .....6/2020 – 7/2020

Technologies: Smartphone Operating Systems and User Interface

Litigation Consulting[1]

Express Mobile, Inc. v. Facebook, Inc. .....4/2021 – present

Jurisdiction: Northern District of California

Counsel: Feinberg Day Kramer Alberti Lim Tonkovich & Belloli LLP

Nature of Suit: Patent

Express Mobile, Inc. v. eBay Inc. .....4/2021 – present

Express Mobile, Inc. v. Salesforce.com, Inc. .....4/2021 – present

Express Mobile, Inc. v. Slack Technologies, Inc. .....4/2021 – present

Jurisdiction: Western District of Texas

Counsel: Feinberg Day Kramer Alberti Lim Tonkovich & Belloli LLP

Nature of Suit: Patent

RS Software LTD v. Chromedio LLC (dba PayeFX).....4/2021 – present

Jurisdiction: Superior Court of California, County of San Diego

Counsel: Messner Reeves LLP

Nature of Suit: Breach of Contract

Total Meter Services Inc. v. GVM Integration Inc. .....3/2021 – present

[1] I was hired by the underlined party.

Jurisdiction: Superior Court of Justice, Ontario, Canada
Counsel: Gowling WLG (Canada) LLP
Nature of Suit: Copyright

Bryndon Fisher v. The United States ..... 12/2020 – present
Jurisdiction: United States Court of Federal Claims
Counsel: Schubert Jonckheer & Kolbe LLP
Nature of Suit: Class Action

Revitch v. New Moosejaw, LLC, et al. .....8/2020 – 12/2021
Jurisdiction: District Court, Northern District of California
Counsel: Bursor & Fisher, P.A.
Nature of Suit: Corporate Civil Suit

The Hertz Corp. v. Accenture, LLP .....7/2019 – 7/2020
Jurisdiction: District Court, Southern District of New York
Counsel: Wiggin and Dana, LLP
Nature of Suit: Breach of Contract

Farmobile, LLC v. Farmers Edge Inc. ..... 4/2019 – present
Jurisdiction: Federal Court of Canada
Counsel: Gowling WLG (Canada) LLP
Nature of Suit: Patent

OnSors, LLC v. Sabrina Schueppl dba NuMe, ABV Group, Inc., et al. ..... 3/2019 – 9/2019
Jurisdiction: Superior Court of the State of California
Counsel: Ulich Balmuth Fisher, LLP
Nature of Suit: Breach of Contract

Patents

1. US Patent 10,827,349, SEALANT: Security for End-Users of Android via Light-Weight Analysis Techniques, granted on November 3rd, 2020.
2. US Patent Application US-2012-0089960-A1, Extensible Collaborative Software Modeling, published on April 14th, 2012.

Publications

Journal Papers

1. Dohyun Kim, Soohyun Park, Joongheon Kim, Jae Young Bang, and Soyi Jung. "Stabilized Adaptive Sampling Control for Reliable Real-Time Learning-based Surveillance Systems." *IEEE/KICS Journal of Communications and Networks*. 23(2):128-136, April 2021.

2. Jae Young Bang, Yuriy Brun, and Nenad Medvidovic. "Collaborative Design Conflicts: Costs and Solutions." *IEEE Software*, vol. 35, no. 6, November/December 2018, pp. 25–31.
3. Yuriy Brun, Jae Young Bang, George Edwards, and Nenad Medvidovic. "Self-Adapting Reliability in Distributed Software Systems." *IEEE Transactions on Software Engineering (TSE)*, 2015.

Conference Papers

1. Jae Young Bang, Yuriy Brun, and Nenad Medvidovic. "Continuous Analysis of Collaborative Design." *In proceedings of the IEEE International Conference on Software Architecture (ICSA17)*, Gothenburg, Sweden, April 2017. **Best Paper Award**.
2. Youn Kyu Lee, Jae Young Bang, Gholamreza Safi, Arman Shahbazian, Yixue Zhao, and Nenad Medvidovic. "A SEALANT for Inter-App Security Holes in Android." *In proceedings of the 39th International Conference on Software Engineering (ICSE17)*, Buenos Aires, Argentina, May 2017.
3. Jae Young Bang and Nenad Medvidovic. "Proactive Conflict Detection of Higher-Order Software Design Conflicts." *In proceedings of the 12th Working IEEE/IFIP Conference on Software Architecture (WICSA15)*, Montreal, Quebec, Canada, May 2015.
4. Youn Kyu Lee, Jae Young Bang, Joshua Garcia, and Nenad Medvidovic. "ViVA: A Visualization and Analysis Tool for Distributed Event-Based Systems." *In proceedings of the 36th International Conference on Software Engineering (ICSE14)*, Hyderabad, India, May 2014.
5. Yuriy Brun, George Edwards, Jae Young Bang, and Nenad Medvidovic. "Smart Redundancy for Distributed Computation." *In proceedings of the 31st International Conference on Distributed Computing Systems (ICDCS11)*, Minneapolis, Minnesota, USA, June 2011.
6. Jae Young Bang, Daniel Popescu, George Edwards, Nenad Medvidovic, Naveen Kulkarni, Girish M. Rama, and Srinivas Padmanabhuni. "CoDesign – A Highly Extensible Collaborative Software Modeling Framework." *In proceedings of the 32nd International Conference on Software Engineering (ICSE10)*, Cape Town, South Africa, May 2010.

Workshop Papers

1. Dohyeon Kim, Joongheon Kim, and Jae Young Bang. "A Reliable, Self-Adaptive Face Identification Framework via Lyapunov Optimization." *In Proceedings of the Workshop on AI Systems at Symposium on Operating Systems Principles (AISys17)*, Shanghai, China, October 2017.
2. Jae Young Bang, Ivo Krka, Nenad Medvidovic, Naveen Kulkarni, and Srinivas Padmanabhuni. "How Software Architects Collaborate: Insights from Collaborative Software Design in Practice." *In proceedings of the 6th International Workshop on Cooperative and Human Aspects of Software Engineering at International Conference on Software Engineering (CHASE13)*, San Francisco, California, USA, May 2013.

3. Jae Young Bang, Daniel Popescu, and Nenad Medvidovic. "Enabling Workspace Awareness for Collaborative Modeling." *Presented at the Future of Collaborative Software Development at Computer Supported Cooperative Work (FutureCSD12)*, Seattle, Washington, USA, February 2012.

Non-refereed Publications

1. Youn Kyu Lee, Ruhollah Shemirani, Jae Young Bang, Arman Shahbazian, Gholamreza Safi, and Nenad Medvidovic. "SEALANT: Preventing Inter-Application Attacks in Android." *Technical Report USC-CSSE-16-601*, Center for Systems and Software Engineering, University of Southern California, 2016.
2. Yuriy Brun, George Edwards, Jae Young Bang, and Nenad Medvidovic. "Online Reliability Improvement via Smart Redundancy in Systems with Faulty and Untrusted Participants." *Technical Report USC-CSSE-2009-510*, Center for Systems and Software Engineering, University of Southern California, 2009.

Research Grants

1. "Computation- and Data-Privacy on the Cloud Google", Google Research, Cloud Credits Award, 2014.

Formal Presentations and Guest Lectures

1. The Web and Internet Security. Guest lecture for USC LAW730 Computer Science for Lawyers, September 22, 2020.
2. Software Forensics in Practice. Guest lecture for USC CS699 Software Forensics, January 27th, 2020.
3. Collaborative Design Conflicts: Costs and Solutions. Invited talk at the Korean Conference on Software Engineering 2019 (KCSE19), Pyeongchang, Korea, January 29th, 2019.
4. Continuous Analysis of Collaborative Design. The IEEE International Conference on Software Architecture (ICSA17), Gothenburg, Sweden, April 6th, 2017.
5. Proactive Detection of Higher-Order Software Design Conflicts. The 12th Working IEEE/IFIP Conference on Software Architecture (WICSA15), Montreal, Quebec, Canada, May 7th, 2015.
6. Proactive Detection of Higher-Order Software Design Conflicts. University of Southern California Center of Systems and Software Engineering Annual Research Review 2015, Los Angeles, CA, April 15th, 2015.
7. Proactive Detection of Higher-Order Software Design Conflicts. PhD Dissertation Defense, Los Angeles, CA, March 19th, 2015.
8. Using a Next-Generation Climate Architecture in Education. The 3rd Annual ESGF/UV-CDAT F2F Meeting, Livermore, CA, December 5th, 2013.

9. How Software Architects Collaborate: Insights from Collaborative Software Design in Practice. University of Southern California Center of Systems and Software Engineering Annual Research Review 2013, Los Angeles, CA, March 13th, 2013.
10. Fast Conflict Detection for Remote Collaborative Software Modeling. University of Southern California Center of Systems and Software Engineering Annual Research Review 2011, Los Angeles, CA, March 8th, 2011.
11. CoDesign–A Highly Extensible Collaborative Software Modeling Framework. The 32nd International Conference on Software Engineering (ICSE10), Cape Town, South Africa, May 5th, 2010.
12. CoDesign – A Highly Extensible Collaborative Software Modeling Framework. University of Southern California Center of Systems and Software Engineering Annual Research Review 2010, Los Angeles, CA, March 9th, 2010.
13. CoDesign/CoWare: A Highly Extensible and Scalable Collaborative Software Modeling Infrastructure. Infosys Aurora 09'. Los Angeles, CA, October 19th, 2009.

Research Project Experience

Funded

University of Southern California: ..... Los Angeles, CA, USA

6/2009 – 12/2014 **CoDesign/CoWare**: A highly extensible, scalable, and event-based collaborative software modeling framework that provides real-time model synchronization, inconsistency checking and conflict detection and resolution via extensible plug-ins. Funded by Infosys Limited.

Graduate-level

University of Southern California: ..... Los Angeles, CA, USA

1/2015 – 5/2015 **FLAME**: An extensible collaborative software design framework that detects high-order design conflicts in a proactive way, i.e., before an architect synchronizes her model and finally becomes aware of them.

Project website: https://flamedesign.org/

6/2014 – 12/2014 **sTile**: Secure distributed computation architecture on clouds

3/2009 – 11/2009 **Smart Redundancy**: Novel redundancy technique for distributed computation. Deployed modified BOINC on PlanetLab.

7/2009 – 9/2009 **rMapReduce**: A programming model and software framework that extends the MapReduce paradigm to gracefully and efficiently tolerate a wide class of failures, including hard-to-detect failures caused by faulty and malicious nodes. Deployed modified Hadoop on PlanetLab.

1/2009 – 3/2009 **Mahjong on PlanetLab**: Deployed Mahjong, by Prof. Yuriy Brun, on PlanetLab, as a Directed Research student under the supervision of Prof. Nenad Medvidovic at University of Southern California

Professional Services

Refereeing and Reviewing

- Computing (COMP) 2021
- Computing (COMP) 2018
- Transactions on Software Engineering and Methodology (TOSEM) 2015
- 8th European Conference on Software Architecture (ECSA 2014) 2014
- 28th Int'l Conference on Automated Software Engineering (ASE 2013) 2013
- 7th European Conference on Software Architecture (ECSA 2013)
- 4th Int'l Symposium on Architecting Critical Systems (ISARCS 2013)
- 16th Int'l Symposium on Component-Based Software Engineering (CBSE 2013)
- 7th Int'l Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2012) 2012
- 6th Int'l Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2011) 2011
- 26th Int'l Conference on Automated Software Engineering (ASE 2011)

Technical Expertise

Programming:	Java (Spring, JDBC), Ruby on Rails, HTML (Slim), CSS, JavaScript (React, Angular, Node, CoffeeScript, TypeScript, JQuery)
Cloud platforms:	Microsoft Azure, Google Compute Engine, Amazon AWS
Frameworks:	Hadoop, PlanetLab, BOINC, GME, Prism-MW, XTEAM

Honors, Awards, Fellowships

4/2017	Best Paper Award at Int'l Conference on Software Architecture 2017
8/2010– 5/2014	USC Annenberg Graduate Fellowship