

# Jae Young Bang, PhD

Director of Software Development  
Senior Computer Scientist

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## Education

### Ph.D. in Computer Science (Software Engineering)

University of Southern California | Los Angeles, CA, USA | May 2015

### M.S. in Computer Science

University of Southern California | Los Angeles, CA, USA | May 2010

### Bachelor of Engineering in Computer Science

Soongsil University | Seoul, Republic of Korea | Aug 2008

## Employment

### Director of Software Development

Quandary Peak Research | Los Angeles, CA | Sept 2022–Present

- Leading the effort of internal software research and development to advance software technologies in software analysis, quality evaluation, design comparison, reverse engineering, cost estimation, and failure investigation.

### Faculty Lecturer

University of Southern California | Los Angeles, CA | Jan 2024–Present

- Teaching the graduate-level Software Architectures class, CSCI-578, Thomas Lord Department of Computer Science, Viterbi School of Engineering.

### Senior Computer Scientist

Quandary Peak Research | Los Angeles, CA | Mar 2019–Present

- Serving as a testifying expert in software litigation cases, including patent and copyright infringement, trademark misappropriation, and breach of contract.
- Consulting as a software expert in due-diligence projects for startup investments and M&A.

### Faculty Lecturer

University of California Irvine | Irvine, CA | Jan 2022–Apr 2022

- Teaching the undergraduate-level Software Design: Structure and Implementation class, INF 122, Department of Informatics, Donald Bren School of Information and Computer Sciences.

## Software Engineer

Kakao Corporation | Seoul Capital Area, Republic of Korea | June 2016–Feb 2019

- Developing the user identity platform for over 100 million users of Kakao services such as the messaging app KakaoTalk.

## Research Assistant

University of Southern California | Los Angeles, CA | May 2009–May 2015

- Leading the collaborative software design research, publishing several first-authored papers and US patents. Researching distributed software system reliability and Android data security.

## Teaching Assistant

University of Southern California | Los Angeles, CA | Jan 2014–Dec 2014

- USC CSCI 578: Software Architecture

## Graduate Research Intern

Infosys Limited | Bangalore, Karnataka, India | June 2012–Aug 2012

- 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.

## Consulting Experience

### Trial and Deposition Testimony

- **MyPort, Inc. v. Samsung Electronics Co., Ltd. et al.** | Deposition | Oct 17, 2023
- **Samsung Electronics Co. Ltd. v. MyPort, Inc. IPR** | Deposition | Sep 28, 2023
- **Total Meter Services Inc v. GVM Integration Inc** | Trial | May 18, 2023
- **Farmobile, LLC v. Farmers Edge Inc** | Deposition | Nov 23, 2021

### Written Testimony

- **MyPort, Inc. v. Samsung Electronics Co., Ltd. et al.** | Expert Report | Oct 13, 2023
- **Samsung Electronics Co. Ltd. v. MyPort, Inc. IPR** | Declaration | July 17, 2023
- **Total Meter Services Inc v. GVM Integration Inc** | Expert Report | Mar 26, 2021
- **Farmobile, LLC v. Farmers Edge Inc** | Affidavit | Nov 5, 2021

### Litigation Consulting

- **InQuisient Inc v. ServiceNow, Inc** | Mar 2024–Present  
Jurisdiction: US District Court for the District of Delaware  
Case Number: 1:22-cv-00900  
Counsel: Fish & Richardson P.C.  
Nature of Suit: Patent

- **Entangled Media, LLC v. Dropbox, Inc.** | Jan 2024–Present  
 Jurisdiction: Western District of Texas  
 Case Number: 1:22-cv-01324  
 Counsel: Skiermont Derby  
 Nature of Suit: Patent
- **Smart Mobile Technologies, LLC v. Samsung Electronics Co. Ltd.** | Oct 2023–Present  
 Jurisdiction: Western District of Texas  
 Case Number: 6:21-cv-00701  
 Counsel: Graves & Shaw LLP  
 Nature of Suit: Patent
- **AGI Suretrack, LLC v. Farmers Edge Inc** | Sept 2023–Present  
 Jurisdiction: U.S. District Court for the District of Nebraska  
 Case Number: 8:22-cv-00275-JFB-SMB  
 Counsel: Irell & Manella LLP  
 Nature of Suit: Patent
- **Polaris PowerLED Technologies, LLC v. Samsung Electronics America** | Sept 2023–Nov 2023  
 Jurisdiction: Eastern District of Texas, Marshal Division  
 Case Number: 2:22-cv-353-JRG  
 Counsel: Kramer Alberti Lim & Tonkovich LLP  
 Nature of Suit: Patent
- **Jennifer Waller v. Tampa Bay Times (Times Publishing Company)** | Apr 2023–May 2023  
 Jurisdiction: US District Court for the Middle District of Florida  
 Case Number: 8:23-cv-00119  
 Counsel: Edelsberg Law, P.A.  
 Nature of Suit: Class Action
- **Melanie Barber v. Eisenhower Medical Center, Inc** | Apr 2023–May 2023  
 Jurisdiction: California Central District Court  
 Case Number: 5:23-cv-00250  
 Counsel: Edelsberg Law, P.A.  
 Nature of Suit: Class Action, Breach of Contract
- **Emma Mendoza v. WP Company LLC dba The Washington Post** | Apr 2023–May 2023  
 Jurisdiction: U.S. District of Columbia Superior Court  
 Case Number: 2023CAB001101  
 Counsel: Edelsberg Law, P.A.  
 Nature of Suit: Class Action
- **Nations Info Corp. v. Rink** | Jan 2023–Present  
 Jurisdiction: American Arbitration Association  
 Counsel: Structure Law Group, LLP  
 Nature of Suit: Breach of Contract
- **IPA Technologies, Inc v. Microsoft Corp.** | Oct 2022–May 2024  
 Jurisdiction: District Court, District of Delaware  
 Counsel: Skiermont Derby, LLP  
 Nature of Suit: Patent

- **MyPort, Inc v. Samsung Electronics Co., Ltd.** | Sept 2022–Present  
Jurisdiction: District Court, Eastern District of Texas  
Counsel: Skiermont Derby, LLP  
Nature of Suit: Patent
- **Via Transportation, Inc v. RideCo Inc** | June 2022–Present  
Jurisdiction: District Court, Western District of Texas  
Counsel: Quinn Emanuel Urquhart & Sullivan, LLP  
Nature of Suit: Patent
- **Broadband iTV, Inc v. Charter Communications, LLC** | Apr 2022–Oct 2022  
Jurisdiction: International Trade Commission (ITC)  
Counsel: Feinberg Day Kramer Alberti Lim Tonkovich & Belloli LLP  
Nature of Suit: Patent
- **Farmobile, LLC v. Farmers Edge Inc** | Apr 2022–Sept 2023  
Jurisdiction: District Court, Eastern District of Texas  
Counsel: Irell & Manella LLP  
Nature of Suit: Patent
- **Zeta Global Corp. v. Maropost Marketing Cloud, Inc** | Apr 2022–July 2022  
Jurisdiction: District Court, Southern District of New York  
Counsel: Newman Du Wors Durrance  
Nature of Suit: Patent
- **Allscripts Healthcare, LLC v. Andor Health, LLC** | Apr 2022–Aug 2022  
Jurisdiction: District of Delaware  
Counsel: Locke Lord LLP  
Nature of Suit: Breach of Contract
- **Express Mobile, Inc v. Meta Platforms, Inc** | Apr 2021–Mar 2022  
Jurisdiction: Northern District of California  
Counsel: Kramer Day Alberti Lim Tonkovich & Belloli, LLP  
Nature of Suit: Patent
- **Express Mobile, Inc v. eBay Inc,**  
**Express Mobile, Inc v. Salesforce.com, Inc,**  
**Express Mobile, Inc v. Slack Technologies, Inc** | Apr 2021–Mar 2022  
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)** | Mar 2021–Apr 2021  
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** | Mar 2021–Present  
Jurisdiction: Superior Court of Justice, Ontario, Canada  
Counsel: Gowling WLG (Canada) LLP  
Nature of Suit: Copyright
- **Bryndon Fisher v. The United States** | Dec 2020–Dec 2022  
Jurisdiction: United States Court of Federal Claims  
Counsel: Schubert Jonckheer & Kolbe LLP  
Nature of Suit: Class Action

- **Revitch v. New Moosejaw, LLC** | Aug 2020–Dec 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** | July 2019–July 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** | Apr 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** | Mar 2019–Sept 2019  
Jurisdiction: Superior Court of the State of California  
Counsel: Ulich Balmuth Fisher, LLP  
Nature of Suit: Breach of Contract

## Technical Due Diligence Consulting

- **HotelPlanner + Reservations.com merger with Astrea – SPAC** | June 2021–Aug 2021  
Technologies: Hospitality Management Systems
- **Enoviq** | Mar 2021–May 2021  
Technologies: Insurance Management Systems
- **Big Capital** | June 2020–July 2020  
Technologies: Smartphone Operating Systems and User Interface

## Formal Presentations and Lectures

- **Software Analysis Practice**  
Invited talk at the 14th International Conference on ICT Convergence (ICTC23), Jeju, Korea | Oct 12, 2023
- **Software Analysis in Practice**  
Guest lecture for USC CS577b Software Engineering | Mar 22, 2022
- **The Web and Internet Security**  
Guest lecture for USC LAW730 Computer Science for Lawyers | Sept 22, 2020
- **Software Forensics in Practice**  
Guest lecture for USC CS699 Software Forensics | Jan 27, 2020
- **Collaborative Design Conflicts: Costs and Solutions**  
Invited talk at the Korean Conference on Software Engineering 2019 (KCSE19), Pyeongchang, Korea | Jan 29, 2019
- **Continuous Analysis of Collaborative Design**  
The IEEE International Conference on Software Architecture (ICSA17) | Gothenburg, Sweden | Apr 6, 2017

- **Proactive Detection of Higher-Order Software Design Conflicts**  
The 12th Working IEEE/IFIP Conference on Software Architecture (WICSA15), Montreal, Quebec, Canada | May 7, 2015
- **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 | Apr 15, 2015
- **Proactive Detection of Higher-Order Software Design Conflicts**  
PhD Dissertation Defense | Los Angeles, CA | Mar 19, 2015
- **Using a Next-Generation Climate Architecture in Education**  
The 3rd Annual ESGF/UV-CDAT F2F Meeting | Livermore, CA | Dec 5, 2013
- **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 | Mar 13, 2013
- **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 | Mar 8, 2011
- **CoDesign – A Highly Extensible Collaborative Software Modeling Framework**  
The 32nd International Conference on Software Engineering (ICSE10), Cape Town, South Africa | May 5, 2010
- **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 | Mar 9, 2010
- **CoDesign/CoWare: A Highly Extensible and Scalable Collaborative Software Modeling Infrastructure**  
Infosys Aurora 2009 | Los Angeles, CA | Oct 19, 2009

## Publications

### Journal Papers

- Dohyun Kim, Soohyun Park, Joongheon Kim, Jae Young Bang, and Soyi Jung | Apr 2021  
**Stabilized Adaptive Sampling Control for Reliable Real-Time Learning-based Surveillance Systems**  
IEEE/KICS Journal of Communications and Networks. 23(2):128-136
- Jae Young Bang, Yuriy Brun, and Nenad Medvidovic | Nov/Dec 2018  
**Collaborative Design Conflicts: Costs and Solutions**  
IEEE Software, vol. 35, no. 6, pp. 25–31
- Yuriy Brun, Jae Young Bang, George Edwards, and Nenad Medvidovic | 2015  
**Self-Adapting Reliability in Distributed Software Systems**  
IEEE Transactions on Software Engineering (TSE)

### Conference Papers

- Jae Young Bang, Yuriy Brun, and Nenad Medvidovic | Apr 2017 | **Best Paper Award**  
**Continuous Analysis of Collaborative Design**  
In proceedings of the IEEE International Conference on Software Architecture (ICSA17), Gothenburg, Sweden

- Youn Kyu Lee, Jae Young Bang, Gholamreza Safi, Arman Shahbazian, Yixue Zhao, and Nenad Medvidovic | May 2017  
***A SEALANT for Inter-App Security Holes in Android***  
In proceedings of the 39th International Conference on Software Engineering (ICSE17), Buenos Aires, Argentina
- Jae Young Bang and Nenad Medvidovic | May 2015  
***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
- Youn Kyu Lee, Jae Young Bang, Joshua Garcia, and Nenad Medvidovic | May 2014  
***ViVA: A Visualization and Analysis Tool for Distributed Event-Based Systems***  
In proceedings of the 36th International Conference on Software Engineering (ICSE14), Hyderabad, India
- Yuriy Brun, George Edwards, Jae Young Bang, and Nenad Medvidovic | June 2011  
***Smart Redundancy for Distributed Computation***  
In proceedings of the 31st International Conference on Distributed Computing Systems (ICDCS11), Minneapolis, Minnesota, USA
- Jae Young Bang, Daniel Popescu, George Edwards, Nenad Medvidovic, Naveen Kulkarni, Girish M. Rama, and Srinivas Padmanabhuni | May 2010  
***CoDesign – A Highly Extensible Collaborative Software Modeling Framework***  
In proceedings of the 32nd International Conference on Software Engineering (ICSE10), Cape Town, South Africa

## Workshop Papers

- Dohyeon Kim, Joongheon Kim, and Jae Young Bang | Oct 2017  
***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
- Jae Young Bang, Ivo Krka, Nenad Medvidovic, Naveen Kulkarni, and Srinivas Padmanabhuni | May 2013  
***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
- Jae Young Bang, Daniel Popescu, and Nenad Medvidovic | Feb 2012  
***Enabling Workspace Awareness for Collaborative Modeling***  
Presented at the Future of Collaborative Software Development at Computer Supported Cooperative Work (FutureCSD12), Seattle, Washington, USA

## Non-refereed Publications

- Youn Kyu Lee, Ruhollah Shemirani, Jae Young Bang, Arman Shahbazian, Gholamreza Safi, and Nenad Medvidovic | 2016  
***SEALANT: Preventing Inter-Application Attacks in Android***  
Technical Report USC-CSSE-16-601, Center for Systems and Software Engineering, University of Southern California.
- Yuriy Brun, George Edwards, Jae Young Bang, and Nenad Medvidovic | 2009  
***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

## Research Grants

- **Computation and Data-Privacy on the Cloud Google**  
Google Research, Cloud Credits Award, 2014

## Research Project Experience

### Funded

University of Southern California

- **CoDesign/CoWare** | June 2009–Dec 2014  
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

- **FLAME** | Jan 2015–May 2015  
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://www.flamedesign.org/>
- **sTile** | June 2014–Dec 2014  
Secure distributed computation architecture on clouds
- **Smart Redundancy** | Mar 2009–Nov 2009  
Novel redundancy technique for distributed computation. Deployed modified BOINC on PlanetLab.
- **rMapReduce** | July 2009–Sept 2009  
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.
- **Mahjong on PlanetLab** | Jan 2009–Mar 2009  
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.

## Academic Services

### Refereeing and Reviewing

- Computing (COMP) | 2023
- Computing (COMP) | 2022
- Computing (COMP) | 2021

- Computing (COMP) | 2018
- Transactions on Software Engineering and Methodology (TOSEM) | 2015
- 8th European Conference on Software Architecture (ECSA 2014)
- 28th Int'l Conference on Automated Software Engineering (ASE 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)
- 6th Int'l Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2011)
- 26th Int'l Conference on Automated Software Engineering (ASE 2011)

## Patents

- **SEALANT: Security for End-Users of Android via Light-Weight Analysis Techniques**  
US Patent 10,827,349, granted on Nov 3, 2020
- **Extensible Collaborative Software Modeling**  
US Patent Application US-2012-0089960-A1, published Apr 14, 2012

## Technical Expertise

- **Programming:** Java (Spring, JDBC), Ruby on Rails, HTML (Slim), CSS, JavaScript (Apps Script, React, Angular, Node, CoffeeScript, TypeScript, JQuery), C, C++, C#, PHP (Hack), Python, Perl, Visual Basic
- **Cloud platforms:** Microsoft Azure, Google Compute Engine, Amazon AWS
- **Frameworks:** Hadoop, PlanetLab, BOINC, GME, Prism-MW, XTEAM

## Honors, Awards, Fellowships

- **Best Paper Award at International Conference on Software Architecture 2017**  
Awarded each year for exceptional research achievement
- **USC Annenberg Graduate Fellowship** | Aug 2010–May 2014