Jae Young Bang, PhD

Director of Software Development
Senior Computer Scientist

+1 323-545-3667
jae@quandarypeak.com

Quandary Peak Research
205 S Broadway, Suite 300
Los Angeles, CA 90012

quandarypeak.com/jae-young

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

- **<u>Entangled Media, LLC</u> v. Dropbox, Inc.** | Jan 2024–Present
  Jurisdiction: Western District of Texas
  Case Number: 1:22-cv-01324
  Counsel: Skiermont Derby
  Nature of Suit: Patent

- **<u>Smart Mobile Technologies, LLC</u> 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

- **<u>AGI Suretrack, LLC</u> 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

- **<u>Polaris PowerLED Technologies, LLC</u> 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

- **<u>Jennifer Waller</u> 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

- **<u>Melanie Barber</u> 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

- **<u>Emma Mendoza</u> 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. <u>Rink</u>** | Jan 2023–Present
  Jurisdiction: American Arbitration Association
  Counsel: Structure Law Group, LLP
  Nature of Suit: Breach of Contract

- **<u>IPA Technologies, Inc</u> v. Microsoft Corp.** | Oct 2022–Present
  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

- **<u>Revitch</u> 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. <u>Accenture, LLP</u>** | July 2019–July 2020
  Jurisdiction: District Court, Southern District of New York
  Counsel: Wiggin and Dana, LLP
  Nature of Suit: Breach of Contract

- **<u>Farmobile, LLC</u> v. Farmers Edge Inc** | Apr 2019–Present
  Jurisdiction: Federal Court of Canada
  Counsel: Gowling WLG (Canada) LLP
  Nature of Suit: Patent

- **<u>OnSors, LLC</u> 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