

Mircea Bardac

Summary

Highly enthusiastic and passionate about creating and growing teams, products and technologies. Always looking to contribute a mix of experience after being a researcher, software architect, team lead, product and business person. Leading local and international teams for 7+ years, bringing products to life for 5+ years, 20+ years of coding, and 10+ years in open source & developer communities. International working experience, customer-focused, very resourceful, always connecting the dots and seeking continuous improvement.

Areas of interest

Business & Organizational Development, Team Growth & People Development
Product Management, Strategic Planning, Open Source Development & Communities
Data Science & Engineering, Distributed Systems/P2P, Full-stack Cloud & IoT Platforms

Skills

Management & Leadership

- Leading technical & non-technical projects with teams in multiple geos or business groups, working with internal and external stakeholders;
- Hiring and growing technical teams, focusing on both people & team strengths;
- Communicating across all levels of the organization, with a solid understanding of business operations & support functions.

Product Management & Strategy

- Designing and delivering new products to remove inefficiencies in processes, to better support business stakeholders, or to improve user experience. Building product differentiation for establishing a strategic and competitive product or business positioning on the market;
- Creating and driving product roadmaps. Leading and communicating product strategy to both business and technical teams;
- Engaging the developer & research communities, delivering technology or research presentations, identifying and using best channels for maximizing impact of communication.

Technical Skills

- Deep understanding of the full web stack, systems architecture, operating system internals (kernel & user-level), virtualization solutions, networking stack, generic & distributed algorithms;
- Architecting & developing tools and dashboards for performance monitoring, data aggregation, data analysis, and data visualization;
- Distributed systems/P2P & IoT full-stack architecture design, implementation, and testing;
- Programming in C/C++, Python, JavaScript, Java, R for statistical analysis; SQL & no-SQL experience
- Linux experience (14+ years): usage, configuration and administration of OS & networking services. Advanced Bash scripting experience;
- Experience working using Agile methodology.

Experience

2017 - present **Startup Advisor**

Advisor on Product and Technology for startups using Machine Learning in various industries:

- Support on building and growing high performing teams, doing product development, customer acquisition, defining go-to-market strategies, setting and tracking product KPIs;
- Advice on selecting technology stacks and algorithms for implementing various product features.

Co-organizer of Bucharest.AI, a local chapter of City.AI (an international network of 40+ cities):

- Established the Bucharest.AI community and currently running activities to support its growth: now 1400+ developers and community members with an active interest in Data Science and applied AI.
- Driven and established partnerships with the local IT companies and professional associations (such as ANIS and American Chamber of Commerce).

2017 **Startup Founder, Marvelly**

Y Combinator Startup School 2017 Alumni (Founders' Track), as Founder of Marvelly, a personal assistant powered by AI for property managers (home rentals industry):

- Led product definition, roadmap, go-to-market strategy, payment gateways/banks/supplier discussions. Elaborated competitive analysis for launching in multiple markets;
- Evaluated technologies & platforms for delivering company's value proposition. Engaged local developers & researchers for input and support, building a pipeline of technical collaborators.

2015 - 2016 **Team & Product Lead, Java on Intel IoT Platforms, Intel**

Hired, ramped up and led the Java on IoT engineering team in Romania

- Ramped up in record time a new engineering team, including interviewing, hiring, mentoring new employees, supporting performance reviews & budget planning. Grew the team's influence and impact in Intel, getting the team to be internally recognized as the "Java on IoT experts";
- Led design, definition, and implementation of the Java API for Intel IoT platforms, covering API requirements, API & Java IoT documentation, integration into existing libraries, API & application samples, IoTDK installer integration, IDE integration, API validation & continuous integration tests.

Released Java on IoT performance monitoring dashboard & measurement processing pipeline

- Designed and implemented end-to-end infrastructure for deployment, control, and measurement of Java performance on Intel IoT platforms, covering both application & system performance;
- Architected and implemented dashboard for exploring performance results, experiment analysis and insights. Defined system and application performance KPIs and metrics;
- Designed and implemented the measurement data processing pipeline, including time-series analysis, cross-experiment statistical analysis, data aggregation, and outlier detection.

Released Java support for Intel IoT Platforms (both maker and commercial product segments)

- Led Intel's efforts on enabling and optimizing Java for all Intel IoT platforms. Managed all stakeholders and the product roadmap for Java on Intel IoT as part of Intel IoT Developer Kit (IoTDK);
- Released open source Java support on GitHub in less than 6 months from project inception, driving the effort across 7 distributed teams (15+ people): three engineering teams (US, UK and Romania), IoTDK product team (US), documentation team (US), installer team (Russia), and IDE (Germany).

2012 - 2014 **Research Program Manager, Intel**

Designed and driven Intel's university research & collaboration programs in Romania, reporting to the Country Manager. Established a growth strategy and initiated collaborations with 16 universities & research partners. Launched and supported 2 collaborative-research projects (Romania & EU funded). Secured international budgets, collaborated with the Legal, HR, Finance & Marketing teams.

Designed, coordinated development, and launched Intel Student Open Lab, Intel's largest university investment in Romania. Led a cross-functional team to create this laboratory, which is serving 650+ students/year and 12 researchers working on projects supported by or of interest to Intel. Designed and led programs around the Lab tailored for the specific needs of local engineering teams.

Optimized and led Intel Romania's summer internship program, reaching on average 170 applicants/position, surpassing previous Intel engagement/conversion rates & applicant quality levels.

Experience (continued)

2008 – 2011 **Software Architect**, University POLITEHNICA of Bucharest

Distro Torrent Experiment (real-time monitoring backend and dashboard)

- Architected and implemented a high-availability monitoring backend for a Peer-to-Peer BitTorrent tracker, extracting real-time traffic and user availability metrics, aggregating and analyzing data, extracting system KPIs, and clustering results based on user geo-location;
- Designed and implemented web-based dashboard for data exploration & analysis.

Virtualized Peer-to-Peer Deployment Infrastructure using Linux Containers

- Designed and implemented infrastructure for container creation, deployment and configuration using Linux Containers (LXC) as a virtualization solution (before Docker existed). Designed & developed Python API for container and workload management;
- Analyzed and identified infrastructure scalability bottlenecks, correlated performance results with system parameters, documented recommendations for future uses of LXC in large deployments.

Context-Aware Classification Engine using Redis storage

- Designed and implemented an infrastructure based on a Redis NoSQL database for storing and managing contextual information extracted and used by networked entities;
- Analyzed the performance and resource utilization of the Redis-based infrastructure for the lookup and update operations, correlated with the number of managed contexts and stored information.

2006 – 2012 **Product Lead & Software Developer**

Publication Finder, Chrome Extension (2011 – 2012): Designed and implemented this Chrome extension used by 1700+ users for annotating web pages of research publications from digital libraries (ACM, IEEE) with direct links to the downloadable publications found using Google Scholar.

Tigus (2006 – 2010): Designed, architected and implemented a multi-component solution for test grading using barcode scanning. This solution sped up test grading by 12x, also reducing grading errors. The solution was successfully deployed and used for 5 years in the class exams of 5 courses (with thousands of tests graded) in University POLITEHNICA of Bucharest, Romania.

2008 **Software Engineering Intern**, Critical Software (Porto, Portugal)

Infrastructure for qualifying Real Time Operating Systems: Architect and developer of a solution used for test campaign execution, report generation, and automatic documentation generation. This has reduced xLuna end-to-end qualification time to less than 1h, also eliminating documentation errors (xLuna is a proprietary real-time OS which was to be used by ESA on one of the Mars rovers):

- The infrastructure supported xLuna on the SPARC architecture, also testing integrations between the underlying open source RTEMS OS and the user-mode version of Linux included with xLuna
- Expertise: real-time operating systems, virtualization, full-stack testing and reporting infrastructure

summer 2007 **Software Engineering Intern**, Google (Mountain View, California, USA)

Designed system for speeding up ad-serving using an in-memory NoSQL database: Researched architecture optimizations for real-time serving of content ads in Google's large-scale distributed system. Analyzed infrastructure bottlenecks in the existing multi-sharded MySQL-based backend. Designed a system based on Google's in-memory BigData store (NoSQL) that syncs with and serves user-data from the existing multi-sharded MySQL database.

- Content Ads Engineering Department, Backend Development Team
- Expertise: distributed system design, C/C++ database middle-ware, data pipeline optimizations

2003 – 2008 **Open Source Developer & Contributor** for project **Psi** (nickname: IceRAM)

Psi (<http://www.psi-im.org>) is an open source instant messenger that implements the XMPP protocol (protocol also known as Jabber). Actively tracked XMPP developments, Jabber Extension Protocol (JEP) proposals and updates, following closely the activity of the standardizing working groups.

Developer and maintainer of the Windows Installer. Designed and implemented the Psi Windows installer, gathering community support for testing and translations.

Community & Dev team support: Developed & maintained wiki-based documentation for Psi, moderated forums and provided early feedback and support to users. Part-time developer & tester.

Academic & Research Experience

2005 - present **Professor**, University POLITEHNICA of Bucharest

Faculty of Automatic Control & Computer Engineering, Computer Engineering Department, Systems Group (<http://systems.cs.pub.ro/people/mircea.bardac/>)

- Assistant Professor (2012 – present), Teaching Assistant (2008 – 2012), Associate Teaching Assistant (2005 – 2008)
- Courses: Introduction to Operating Systems, Computer Networks, Operating Systems, Operating Systems (Practical), Network Services for Internet Service Providers

Projects (selection):

- **Team Lead for the Computer Networks team** (10+ people). Designed lab content & assignments, supervised content review and lab software infrastructure, providing expertise & support in finishing critical team tasks.
- **Led 3 teams of student researchers** (7 students) working on Android: forensics methodologies & tools, data encryption performance evaluation, virtualization, and process isolation.
- **Virtualized infrastructure for network administration skills assessment.** Designed, implemented, tested and deployed an OS-level virtualization solution for remotely assessing network administration skills. Solution used for the Computer Networking and Introduction to Operating Systems courses (1000+ projects evaluated over 3+ years).
- **Diploma Upload Platform (2010 - 2013):** Designed, architected, implemented and later led the development team of the upload platform for university graduation projects. The solution has been used for 4 years by 1500+ students and 40+ professors.

2010 - 2011 **Guest Researcher**, Delft University of Technology, Netherlands Electrical Engineering, Mathematics, and Computer Science Faculty

Worked with the Parallel and Distributed Systems Group on Peer-to-Peer (P2P) protocol optimizations and models for reputation dissemination to ensure fairness and avoid attacks (such as collusion) that would impact data exchange in P2P swarms. Designed and implemented:

- Tools and infrastructure for measuring dissemination efficiency of reputation information in P2P systems of various sizes.
- Infrastructure for configuring, managing and analyzing experiment results in very large, scenario-driven, simulations with real P2P clients. This infrastructure was deployed on the Netherlands Distributed Supercomputing Cluster.

Books

- 2009** Co-author of **Introduction in Operating Systems** [(ro) Introducere în Sisteme de Operare]
 - Publisher Printech 2009, 535 pages, ISBN 978-606-521-386-9
- 2007** Co-author of **Using Operating Systems** [(ro) Utilizarea Sistemelor de Operare]
 - Publisher Printech 2007, 374 pages, ISBN 978-973-718-788-8
 - Author of the chapters: Compiling, linking and application execution, File systems, Low level analysis of Operating Systems.

Research Papers (selection)

Monitoring a BitTorrent tracker for peer-to-peer system analysis - Mircea Bardac, George Milescu, Răzvan Deaconescu, International Symposium on Intelligent Distributed Computing - IDC 2009, October 12-14, 2009, Ayia Napa, Cyprus, Vol. 237, pag. 203-208, ISBN 978-3-642-03213-4

Scaling Peer-to-Peer testing using Linux Containers (Selected Student Paper Award), Mircea Bardac, Răzvan Deaconescu, Adina Magda Florea, 9th RoEduNet IEEE International Conference 2010, June 24-26, 2010, Sibiu, Romania, pag. 287-292, ISSN: 2068-1038, ISBN 978-1-4244-7335-9

Deploying a High-Performance Context-Aware Peer Classification Engine, Mircea Bardac, George Milescu, Adina Magda Florea, 7th International Conference on Networking and Services (ICNS 2011), May 22-27, 2010, Venice/Mestre, Italy, pag. 268-273, ISBN: 978-1-61208-006-2

Education

- 2008 - 2011** **PhD in Distributed Systems**, University POLITEHNICA of Bucharest, Romania
Thesis title: Intelligent Strategies for Improving Resource Sharing in Peer-to-Peer Systems
- 2008 - 2010** **Master Degree in Distributed Systems**, University POLITEHNICA of Bucharest, Romania
Dissertation title: Real-time Behavior Analysis in Peer-to-Peer Swarms
- 2003 - 2008** **Bachelor Degree in Computer Engineering**, University POLITEHNICA of Bucharest, Romania

Certifications

- 2017** Executive Data Science (Coursera license: 8KFAG68XRZ8H), Johns Hopkins University
A Crash Course in Data Science, Building a Data Science Team, Managing Data Analysis, Data Science in Real Life, Executive Data Science Capstone
- 2016** Train-the-Trainer training by Adrian Cioroianu (AC Knowledge)
- 2015** Public Speaking Training by Teodora Metiu
- 2014** Brand Strategy Training by Ștefan Liuțe, Strategy Director at Storience Brand Agency
- 2003 - 2009** Multiple technical trainings on networking, security, multi-core programming, databases

Professional Affiliations

- **Founder of ROSEdu** (Romanian Open Source for Education) since 2007
ROSEdu is a community of open-source software enthusiasts, designing and implementing open source applications for the educational environment and running activities to encourage & develop the open source educational community.
- **ACM Member** (Association for Computing Machinery) since 2009

Volunteering Activities

- 2015 - present** **Mentor & Jury Member at Innovation Labs**
Mentor for early-stage startups participating in the Innovation Labs program, focused on customer development and product-market fit. Innovation Labs (<https://innovationlabs.ro/>) is the largest startup incubation program in Romania.
- 2009 - 2010** **Lectures on Git at the Free Development Course organized by ROSEdu**
Created and delivered lectures on Git at the Free Development Course editions (<http://cdl.rosedu.org>) organized by Romanian Open Source for Education (ROSEdu) organization.
- 2002 - 2003, 2006** **Trainer for Junior Achievement Romania**
Trained and provided support with general management and decision strategies to participating teams in the MESE competitions (Management and Economic Simulation Exercise) organized by Junior Achievement. Organized and supervised economic simulations exercises.

Languages

Romanian (native speaker)
English (fluent) – English for Professional Communication Degree (2005)
French (average), Portuguese (beginner), German (beginner)

Last update May 30th, 2018