Nikos **Katirtzis**

Software Engineer · Associate Software Dev Engineer

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Education

The University of Edinburgh   *Edinburgh, United Kingdom*

M.Sc. in Computer Science (*Distinction*)   *Sep. 2015 - Aug. 2016*

- *Major*: Computer Systems, Software Engineering and High Performance Computing
- *Modules*: Applied Databases, Distributed Systems, Extreme Computing, Informatics Research Proposal, Informatics Research Review, Java Programming, Programming Skills, Software Architecture, Process, and Management, Software Development, Software Testing
- *Thesis*: "Summarising How a Software API is Used Using Machine Learning and Natural Language Processing Techniques"
- *GPA*: 76.4/100.0

Aristotle University of Thessaloniki   *Thessaloniki, Greece*

M.Eng. in Electrical and Computer Engineering (*2:1*)   *Sep. 2009 - Nov. 2014*

- *Major*: Electronics and Computer Engineering
- *Thesis*: "Mining Software Repositories for Test-Driven Reuse"
- *Qualification*: Ranked among **top 3%** of class
- *GPA*: 7.78/10.00

Experience

Hotels.com (Expedia Inc.)   *London, United Kingdom*

Associate Software Dev Engineer   *Sep. 2016 - PRESENT*

Team specific:

- Part of Customer Retention Team (CRT), which is responsible for designing and building technical solutions on how customers are identified, sign up for an account, and sign in to their account.
- Contributed to most of the key projects of the team including the redesigned "Forgot Password" flow and the "Password-less Sign-in" flow, as well as to several security-related investigations.
- Improved monitoring and alerting for our services in Grafana.
- Using Java/Scala and the Spring MVC, Spring Boot, and Scalatra Frameworks to serve web content.
- Using Spring MVC Test Framework, Mockito and TestNG for unit testing.
- Exposed to Cucumber for writing acceptance tests in Java/Scala.
- Using Docker to automate the deployment of our applications.
- Using Python to automate everyday tasks and for data manipulation.
- Using Splunk for log analysis.
- Using MySQL and Datastax Cassandra NoSQL databases.
- Following popular Agile practices including Pair Programming, CI, TDD, and BDD.
- Following the Scrum process and using Atlassian's JIRA Software to support project management.
- Using Atlassian's software products including Bitbucket Server for version control, Bamboo Server for Continuous Delivery, and Confluence for better team collaboration.

Side projects/activities:

- Active part of grads/interns interviews. My responsibilities included writing, reviewing, and testing the coding challenges on Hackerrank as well as interviewing candidates during their final round interviews.
- Core member of the "Hacking for Gender Balance" project, an ongoing project which started as a hackathon project with its main idea being to use Jira to track candidates applications. Among others, I've implemented a Groovy listener on Jira's ScriptRunner that predicts and populates the gender of the candidate based on his/her full name, by communicating with NameApi.
- Organised several brown bag sessions where I introduced new technologies and tools that I have built as part of our innovation time.
- Successfully conducted a pilot user survey for *CLAMS*, the system that I developed as part of my MSc project and which I applied to Hotels.com's source code (see *Personal Projects* section).
- Have been working on several different projects as part of our innovation time, including but no limited to PoCs to improve or replace the internal code search engine tools available at Hotels.com, or getting exposed to the AWS ecosystem.

Skills

Programming Languages	Java, Python, Scala, C
Operating Systems	Linux, MacOS, Microsoft Windows
Frameworks	Maven, Spring, Mockito, JUnit, TestNG, Hadoop MapReduce, Lucene
Databases	Microsoft SQL Server, Cassandra, MongoDB, Oracle SQL Developer
Web Development	HTML, CSS, Bootstrap, Flask, Jekyll
IDEs	IntelliJ IDEA, PyCharm, Eclipse SDK
Other Software	AWS, LaTeX, Splunk, scikit-learn, NLTK
Languages	Greek, English, German

Volunteering

Expedia Inc. *London, United Kingdom*

Teaching Assistant (TA) at Expedia Codeacademy "Python Level 2" course *Jan. 2017 - Jul. 2017*

- Providing classroom support by answering questions, resolving technical issues, and guiding students to complete their assignments in Python.
- Supporting drop-in sessions.
- Providing support as well as useful resources through course's Slack channel.

Greek Army *Xanthi, Greece*

Computer Systems Operator (Soldier) *Nov. 2014 - Aug. 2015*

- Responsible for the software used to control the targets during tank shots, as well as for many electronic devices that enabled monitoring of the shots.
- Drafted tutorials for the electronic devices and the software I used as part of my responsibilities.
- Drafted reports about results of the tank shots and about condition of the electronic equipment that was used during tank shots.
- Updated presentations used to support tank shots.

Aristotle University of Thessaloniki *Thessaloniki, Greece*

Organising member at "Auth Programming Contests" *Dec. 2013 - Apr. 2014*

- I focused on organising online programming contests for undergraduate students at Aristotle University of Thessaloniki (School of Electrical and Computer Engineering)
- Contributed to the website used for the programming competitions (available at `http://contests.ee.auth.gr`) by generating programming problems and providing analysis and solutions for the challenges.

Personal Projects

Summarizing Software API Usage Examples using Clustering Techniques *Mar. 2016 - Present*

- I'm the main developer behind *CLAMS (Clustering for API Mining of Snippets)*, a novel approach for mining API Usage Examples in the form of source code snippets, from client code.
- The system clusters client usage examples based on their API calls, generates summarized versions for the top snippets of each cluster, and then selects the most representative snippet from each cluster, using a tree edit distance metric on the ASTs.
- This results in a set of high quality API usage examples in the form of concise and readable snippets, thus enabling and supporting source code reuse even in cases of libraries with sparse or minimal documentation.
- Method is entirely data-driven, requiring only syntactic information from the source code, and so is programming language- agnostic.
- This project started as an MSc Thesis project while being a postgraduate student at University of Edinburgh, being supervised by Prof. Charles Sutton and co-supervised by Mr Themistoklis Diamantopoulos (Aristotle University of Thessaloniki).
- The paper for CLAMS will be presented at the *International Conference on Fundamental Approaches to Software Engineering* (FASE) 2018.
- CLAMS has been successfully applied internally at Hotels.com and received encouraging feedback. You may find the user survey at: `https://mast-group.github.io/clams/user-survey/`.
- The system is available at `https://mast-group.github.io/clams/`.

Mantissa: A Recommendation System for Test-Driven Code Reuse *Jan. 2013 - Present*

- Designed and developed *Mantissa*, an RSSE (Recommendation System in Software Engineering) that allows code searching in growing repositories, using CSEs such as GitHub Search.
- The back-end of Mantissa is written in Python and Java while the website is a Flask application where basic web development technologies like HTML, CSS and JavaScript have been used.
- Mantissa extracts the query from the source code of the developer, and employs AGORA and GitHub to search for available source code. The retrieved results are ranked using the Vector Space Model (VSM), while various Information Retrieval (IR) techniques and heuristics are employed in order to best rank the results.
- Additional source code transformations are performed so that each result can be ready-to-use by the developer. Apart from relevance scoring, each result is presented along with useful information indicating its original source code, its control flow, as well as any external dependencies.
- This project started as an MEng thesis project while being an undergraduate student at Aristotle University of Thessaloniki, being supervised by Prof. Andreas Symeonidis and co-supervised by Mr Themistoklis Diamantopoulos.
- During the last 2 years we've proceeded to several improvements and feature additions, including source code transformations and extraction of the source code flow of results' methods.
- The system is available at `http://mantissa.ee.auth.gr`.

Publications

[1] **Summarizing Software API Usage Examples using Clustering Techniques**. Nikolaos Katirtzis, Themistoklis Diamantopoulos and Charles Sutton. In *International Conference on Fundamental Approaches to Software Engineering* (FASE) 2018.

Conferences

SoftConf
Thessaloniki, Greece

Voxxed Days Thessaloniki
Nov. 2017

- A two-day conference that brings together popular speakers, core developers of popular open source technologies and professionals willing to share their knowledge and experiences.

Expedia Inc.
London, UK

EI Global Cloud xTech Conference
Nov. 2017

- A two-day internal conference featuring industry keynote speakers, panels and presentations from colleagues and special guests focusing on Cloud technologies used at Expedia Inc.

Dmje Lt
London, UK

Devoxx UK
May. 2017

- Devoxx is a two-day annual conference that welcomes over 11,000 developers to events in Belgium, France, UK, Poland, Morocco & the USA. Attended several sessions, mainly related to the Java Language, Architecture, Cloud, Big Data & Machine Learning.

Aristotle University of Thessaloniki
Thessaloniki, Greece

7TH Panhellenic Electrical and Computer Engineering Students Conference
Apr. 2014

- A three-day conference which aims to gather every Electrical and Computer Engineering student from around Greece and give insight into the latest technological breakthroughs and the new challenges of the market. The conference, entitled "Dismantling the Problem: The Engineers of the Modern Days" included talks as well as technical sessions.
- Successfully organised a programming contest as part of "Auth Programming Contests" in the last day of the conference. The competition attracted more than 30 students.

Seminars

nearForm Ltd.
London, United Kingdom

Microservices Day London
May 2017

- A one-day, single-track, non-profit event that focuses on the evolution and transformation of enterprise from a technology perspective. The day included, among others, talks about the pros and cons of Microservices, popular Microservices Architectures, and the approach for moving from monoliths to Microservices.

Amazon
London, United Kingdom

AWSome Day
Jan. 2017

- A one-day training event delivered by AWS technical instructors. The day included a session highlighting why customers are using AWS to develop, deploy and operate secure applications and IT services, as well as technical sessions that covered the AWS foundational services such as Amazon EC2, Amazon S3 and Amazon RDS.

MathWorks
Edinburgh, United Kingdom

Data Analytics with MATLAB
Sep. 2015

- During this seminar experienced MathWorks engineers presented how MATLAB can be used to accelerate algorithm development and exploration, and reduce development time for machine learning, image processing and computer vision applications, using live application examples.

GDG Thessaloniki
Thessaloniki, Greece

Google Developer Days CodeLab on the new DART Language
Feb. 2014

- Two-day event organised by Google Developers Group Thessaloniki which included tech talks as well as workshops on the DART language.

Meetups

Hotels.com
London, United Kingdom

Hotels.com Java Meet Up
Jan. 2018

- During that meetup, Jack Shirazi and Andrzej Czarny from Ocado focused on performance issues and workarounds, while Simon Maple from ZeroTurnaround presented a couple of eye-catching statistics on the tools and technologies Java developers use.
- You can find my review of the meetup at:
`https://www.linkedin.com/pulse/my-review-hotelscom-java-meet-up-nikos-katirtzis/`

Agile Testing
London, United Kingdom

Testable Software Architecture with Aslak Hellesoy!
Mar. 2017

- During that session, Aslak Hellesoy, the creator of Cucumber, suggested ways for designing and building testable software architectures, using techniques like Ports, Adapters, and Contract tests.

London Java Community
London, United Kingdom

Java Language and Platform Futures: A Sneak Peek
Mar. 2017

- In that session, Java Language Architect Brian Goetz offered a sneak peek at some of the features currently under exploration for future versions of Java, both short- and long-term.

Sky
London, United Kingdom

The inside story of using Cassandra and Continuous Integration at Sky
Nov. 2016

- During this meetup, two of Sky's principal engineers talked about their experience with Cassandra and Continuous Integration in Sky's Online Video Platform.

Expedia
London, United Kingdom

Multi-Variate (A/B) Testing at Expedia
Oct. 2016

- An introduction to Expedia's A/B testing framework, including an overview of the technologies used and the hard lessons learned along the way.

Competitions

Hotels.com
London, United Kingdom

Hotels.com Winter Hackathon
Feb. 2017

- A 24-hour internal hackathon entitled "Fast on Fones R Us'.
- Developed and presented a Q&A bot that consumes Hotels.com's APIs and uses decision trees in order to facilitate hotel search, alongside a team of 7 software developers.

Google
Virtual

Google Code Jam 2014
Apr. 2014

- An international programming competition hosted and administered by Google.

IEEE
Virtual

IEEEXtreme Programming Competition 7.0
Oct. 2013

- A global challenge in which teams of IEEE Student members -advised and proctored by an IEEE member, and often supported by an IEEE Student Branch- compete in a 24-hour time span against each other to solve a set of programming problems.

IEEE
Virtual

IEEEXtreme Programming Competition 6.0
Oct. 2012

- A global challenge in which teams of IEEE Student members -advised and proctored by an IEEE member, and often supported by an IEEE Student Branch- compete in a 24-hour time span against each other to solve a set of programming problems.

Greek Ministry of Education, Research and Religious Affairs
Virtual

"Lysias" Competition
Mar. 2002

- LYSIAS is an annual Internet-based Panhellenic competition for students. Participants are required to answer 35 standardized questions (multiple choice and True/False, covering a range of school subjects (Mathematics, Physics, Chemistry, Biology, Information Technology, Ancient and Modern Greek, History, Geography, Economics, Art) as well as general knowledge questions.
- Qualified for final round (top 64 students in Greece).