

Costas Zarifis

Curriculum Vitae

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Education

- Currently *Ph.D. in Computer Science & Engineering* at **University of California, San Diego** - 5th Year.
Expanding the FORWARD web application framework (forward.ucsd.edu) and the DELPHI personalized population health platform (delphi.ucsd.edu) under the supervision of Yannis Papakonstantinou.
- 06/16 *Master of Science Degree in Computer Science & Engineering* at **University of California, San Diego**.
GPA: 3.82/4
- 05/13 *Honors Engineering Degree in Electronic and Computer Engineering (ECE)* at *Technical University of Crete, Greece*.
5 year University Program - Equivalent to **M.Sc.**,
Graduation grade: 81.5/100
Average grade in *Computer Science* courses taken in ECE: 88/100
Average grade in courses taken in my final year: 90/100
My *ECE diploma thesis* was in the area of *Software Engineering*.

Computer skills

Web Development Languages

JavaScript, HTML, CSS, PHP, JSP, XSD, XML, Xpath, XSL, XQuery

Programming/Scripting Languages

Java, Python, nesC, C/C++

Web Services

WebSockets, SOAP, WSDL, RESTfull services

Tools, Frameworks & DB Systems

AngularJS, Java JAX-RS/JAX-WS, TinyOS, Apache, PostgreSQL, MySQL, eXist DB, SciDB, CouchDB, MongoDB, HADOOP Map/Reduce, Java Spring, Android Framework, GIT, Boost library, WordPress development, L^AT_EX

Requirements Modeling, Design and Usability Engineering

Use Cases, UML, ICONIX, Storyboarding, Paper Prototyping, PowerPoint Prototyping, Contextual design, Walk-through Evaluation, Think Aloud Evaluation, Heuristic Evaluation

Research Interests

- Software Engineering
- Web & Mobile Architectures, Applications, and Services
- Database & Big Data Management Systems
- Wireless Sensor Networks

Papers In Preparation - Drafts available upon request

- **Costas (Konstantinos) Zarifis**, Yannis Papakonstantinou. FORWARD: Extensible and Efficient Diff-based MVVM Visualization and Web App Development Framework.
- **Costas (Konstantinos) Zarifis**, Andreas Prodromou, Yannis Papakonstantinou. ViDeTTe Interactive Notebooks.

Papers

- Yannis Katsis, Natasha Balac, Derek Chapman, Madhur Kapoor, Jessica Block, William G. Griswold, Jeannie Huang, Nikos Koulouris, Massimiliano Menarini, Viswanath Nandigam, Mandy Ngo, Kian Win Ong, Yannis Papakonstantinou, Besa Smith, **Costas (Konstantinos) Zarifis**, Steven Woolf, Kevin Patrick. Big Data Discovery for Public Health, Chase 2017, Second IEEE/ACM Conference on Connected Health, Applications, Systems and Engineering Technologies.
- **Costas (Konstantinos) Zarifis**, Yannis Katsis, Yannis Papakonstantinou. Application View Maintenance: Optimizing Change Propagation in Mobile Applications, Technical Report. URL: tinyurl.com/kzm21sw
- **Costas (Konstantinos) Zarifis**, Yannis Papakonstantinou. In-depth Survey of MVVM Web Application Frameworks, Technical Report. URL: tinyurl.com/14ujfmx

Honors

- GSR Funding as a Research Assistant in all 5 Years (2013-2018)
- Dean's List - In all 5 years of undergraduate studies (2007-2012)
- Top 10% - When accepted by ECE Department (2007)

Work Experience

Informatica, Rev, Software Engineering/Data Management and Analytics

6/15 - Internship as Full-stack developer/Data Scientist.

9/15 www.informatica.com/rev-app.informatica.com

- Extension of (Informatica's) Rev data analytics platform to provide additional data mining functionality
- Implementation of data mining modules that enable extraction of useful information from free text. Such data mining scenarios include extraction of semantically related words and valid US address extraction from free text
- Extension of both front-end and back-end infrastructure to expose the additional functionality to end users

Annai Systems, Bioinformatics/Data Management

6/14 - Internship as DB Engineer & Big Data Analyst.

9/14 www.annaisystems.com

- Development of data-mining framework for big genomic data on a cluster
- Integration of SciDB (Array Based DBMS) and iPython notebooks to effectively store & analyze genomic data
- Applying machine learning algorithms and performing Principal component analysis on genomic data to extract meaningful information.

Enter Events, Event Organization Company

04/13 System Administrator & Web Developer. (contracted assignment)

enterevents.gr

- Implementation using CodeIgniter MVC PHP Framework
- HTML template implementation & CSS fine tuning - Use of Javascript & jQuery UI widgets

luben magazine

11/12 - System Administrator & Web Developer.

07/13 luben.tv

- Installation, configuration & maintenance of web server, website & mail server
- HCI & specification analysis of the website
- Functional prioritization & delegation of duties
- Supervision of development process & delivery of the final product

nohSYS IT & Engineering Company

7/11 - Internship as DB & Web Developer.

9/11 www.nohsys.net

- Use of PHP MVC Framework (CodeIgniter) - HTML template development & CSS fine tuning
- Both Front-End & Back-End Development

Selected Projects

FORWARD: A declarative web application development framework

FORWARD is a web application framework that enables declarative specification of visualization-rich applications. It provides automatic incremental rendering capabilities, thus facilitating the creation and maintenance of live visualizations, whenever the underlying data change, without compromising developer friendliness. More details on the FORWARD framework (without the details on the incremental rendering features that are currently prepared for submission) can be found on the project's website: forward.ucsd.edu

Delphi: A platform for the integration, analysis and visualization of health data

DELPHI is a platform that enables integrated access and analysis of all data relevant to health. This platform promotes a more rapid development of empowering, data-driven health apps and tools by a broad community of health-related software developers. The DELPHI project is a collaboration with the UC San Diego School of Medicine, Calit2 and the Department of Computer Science and Engineering. More details can be found on the website: delphi.ucsd.edu

ViDeTTe Interactive Notebooks: Enhancing Jupyter Notebooks with Advanced Data Exploratory Capabilities

ViDeTTe provides a declarative language that facilitates the tasks of data retrieval and data visualization. As the notebook readers interact with the generated visualizations, they can trigger the reevaluation of other parts of the notebook that depend on the user input, thus causing additional data transfer and/or mutations to the remaining displayed visualizations. By enabling this reactive behavior, ViDeTTe offers enhanced data exploratory capabilities to notebook readers and data analysts without requiring advanced coding skills. A demo of this tool can be found here: tinyurl.com/y75qdsp7

Undergraduate Thesis Implementation

My undergraduate thesis projects consists of an Android Application, a Web Service and a Wireless Sensor Network (WSN) program. Supported operations include the generation and execution of aggregate queries (sum, avg, min etc) and outlier detection on the sensor network using the android application.

GIS Software Development for a Sea Navigation System

In this project, a C++ application was developed that calculates the route of a ship given the coordinates of the current position and the destination. Data handling techniques such as QuadTree Gridding were used to manipulate geometry entities and the BFS algorithm was used to calculate the route on the map. A number of C++ libraries, such as Boost, CGAL, ORG-GDAL were also used.