FLORIN CHELARU

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WORK EXPERIENCE

Google Inc., Cloud Monitoring — Feb 2017 – Jan 2022
Senior Software Engineer; Tech Lead; Engineering Manager
Lead a team of engineers at Google, in the Cloud Monitoring group and designed large parts of a cloud resource metadata ingestion system consisting of several micro-services and an API. Some of the technologies used include Cloud Spanner, Cloud Pub/Sub and Kubernetes Platform.

Twinfog Inc. angel.co/twinfog — July 2016 – December 2017
Co-Founder & CTO
Founded Twinfog, a geolocation-based Reddit for helping communities of expats. I designed and implemented the Twinfog cross platform mobile app using Xamarin (C# .NET) for the UI, and ASP.NET MVC, SQL Server and Azure Cloud Services for the backend. Demo video: youtu.be/oINy4qSrMiM

MIT Computer Science and Artificial Intelligence Laboratory — August 2015 – June 2016
Postdoctoral Associate
Expanded on the work done for my Ph.D. by designing a series of open-source visualization libraries for *genetic variants* analysis. Base library code available at: github.com/florin-chelaru/vis.js.

University of Maryland Center for Bioinformatics and Computational Biology — Jan 2011 – Jun 2015
Graduate Research Assistant
Research Assistant in the Center for Bioinformatics and Computational Biology, at the University of Maryland, College Park. I created and developed Epiviz (epiviz.org), a big data visualization and analysis tool for epigenetics and genomics. Featured in Nature Methods and adopted by Genentech. GitHub project: github.com/epiviz.

Rocket Fuel Inc., Artificial Intelligence Team — 2014, Jun–Sep; 2013, Jun–Sep
Software Engineer
Worked on the Artificial Intelligence (Ad Prediction) team. Designed and implemented ML, probabilistic models and a visualization tool to improve conversion rates for online ads.

Facebook Inc., Spam Detection Team (Site Integrity) — 2012, May–Aug
Software Engineer
Worked on the Spam Detection team, using Machine Learning models to aid in the detection of malicious users and content.

University of Maryland Department of Computer Science — Jan 2011 – Dec 2012
Graduate Teaching Assistant for the following classes:
CMSC702 – Computational Systems Biology (Instructor: Dr. Hector Corrada)
CMSC433 – Parallelism and Multithreading in Java (Instructors: Dr. Adam Porter, Dr. Tom Yeh)
CMSC420 – Data Structures (Instructor: Professor Hanan Samet)

Microsoft Inc., Office Team (Lync Server) — Jun 2010 – Jan 2011
Software Engineer
Designed database optimization software for improving the performance of the Lync Communication Server.

Microsoft Inc., Bing Team (Search Domain Relevance) — Sep 2008 – Jun 2010
Software Engineer in Test
Designed and developed software for measuring the quality of web search results in the Bing search engine. Created a visualization tool for monitoring the quality and relevance of search result captions.

Code40 Inc. Romania — 2007, Jul–Aug
Undergraduate Internship
Designed and implemented components of a web server application for micro-loans: caching, back-end data validation, error handling.

EDUCATION

University of Maryland, College Park — Jan 2011 – May 2015
Doctor of Philosophy, *Computer Science*
Advisor: Dr. Héctor Corrada Bravo

Dissertation: Epiviz: interactive visual analytics software for genomics
Relevant coursework: Machine Learning (H. C. Bravo); Information Visualization (B. Shneiderman); Neural Modeling (J. Reggia); Computational Linguistics (K. H. Seitz); Computational Genomics (C. Kingsford); Functional Genomics (H. C. Bravo); Computer Vision (Y. Aloimonos).

University Al. I. Cuza, Iaşi, Romania — Sep 2004 – Jun 2008
Bachelor of Science, Computer Science
Class Rank: 8 of 176
Advisor: Dr. Liviu Ciortuz

Bachelor's dissertation: Artificial Intelligence in Computer Go
Relevant coursework: Machine Learning; Bioinformatics; Neural Modeling; Evolutionary Algorithms; Artificial Intelligence; Graph Theory; Algorithm Design; Probabilities and Statistics; Calculability, Decidability and Complexity; Cryptography; Antivirus Technologies; Software Engineering and Design Patterns; C/C++; C# and .NET Framework; Java; Relational Databases and SQL.

PUBLICATIONS

J. Wagner*, **F. Chelaru***, J. Kancherla*, J. N. Paulson*, A. Zhang, V. Felix, A. Mahurkar, N. Elmqvist, H. C. Bravo, "Metaviz: interactive statistical and visual analysis of metagenomic data". Nucleic Acids Research, gky136, Feb. 2018 https://doi.org/10.1093/nar/gky136

F. Chelaru* and H. C. Bravo, "Epiviz: a view inside the design of an integrated visual analysis software for genomics". BMC Bioinformatics, 16 Suppl 11, S4. http://doi.org/10.1186/1471-2105-16-S11-S4

F. Chelaru*, L. Smith, N. Goldstein, and H. C. Bravo, "Epiviz: interactive visual analytics for functional genomics data," *Nature Methods*, vol. 11, no. 9, pp. 938–940, Aug. 2014. http://dx.doi.org/10.1038/nmeth.3038

H. C. Bravo*, **F. Chelaru**, L. Smith and N. Goldstein, "epivizr: R Interface to epiviz web app," Bioconductor package: 1.4.2.

F. Chelaru* and L. Ciortuz, "Combining old-fashioned computer go with monte carlo go," in *Proceedings of the 2008 10th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, SYNASC 2008*, 2008, pp. 216–222.
http://dx.doi.org/10.1109/SYNASC.2008.77

S. Iftene* and **F. Chelaru**, "The general Chinese remainder theorem," in *International Scientific Journal of Computing*, vol. 6, issue 1, pp. 44-50, 2007. http://www.computingonline.net/archieve/IJC_2007_06_1_05.pdf

SOFTWARE PROJECTS

Music with Ms. Johnson (vioara-cu-susanna.ro) — Jan 2023
github.com/florin-chelaru/music-with-susanna
The professional presentation page of Susanna Johnson, violin, viola and general music teacher.
TypeScript, ReactJS, Material UI

Epiviz (epiviz.org) — Aug 2014
github.com/epiviz
A web visualization tool used to aid in the analysis and exploration of large functional genomics data.
JavaScript (JQuery, d3.js, WebSockets), PHP, MySQL, R/Bioconductor, Python

Epivizr Bioconductor R Package — Aug 2014
github.com/epiviz/epivizr, epiviz.github.io

An R package that provides WebSocket communication to the Epiviz web app for interactive visualization of genomic data. Objects in R/bioc interactive sessions can be displayed in genome browser tracks or plots to be explored by navigation through genomic regions.
Authors: H. C. Bravo, **F. Chelaru**, L. Smith, N. Goldstein*

IsoCreator (iso-creator-cs.sourceforge.net) — Feb 2007

A .NET app used to create ISO 9660 Joliet CD/DVD images from folders on the local machine.
C#, .NET Framework 2.0

TECHNOLOGIES USED

Cloud & Distributed Systems: Kubernetes, Google Cloud Platform (worked on the GCP team).
Frontend: React.js, TypeScript, Xamarin/MAUI.
Backend: Java (J2EE), ASP.NET, Python, Node.js.
Databases: Google Cloud Spanner, Mongo DB, Microsoft SQL Server, MySQL.

LANGUAGES

Romanian – native, English – fluent, German – B1 level.

REFERENCES

Dr. Héctor Corrada Bravo
Senior Principal Scientist at Genentech
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hcbravo.org

Dr. Mihai Pop
Professor, Department of Computer Science, University of Maryland, College Park
Director, University of Maryland Institute for Advanced Computer Studies (UMIACS)
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pop-lab.org

Dr. Jack van Ryswyck
Senior Research Scientist at Snowflake
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Dr. Michael Benisch
VP of Engineering at Woven Planet
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