


# Dmytro BOGATOV

Software Development Engineer at Amazon |  
Ph.D. in Database Security from Boston University

dbogatov.org  github.com/dbogatov  dmytro-bogatov@stackoverflow  
 linkedin.com/in/dmytrobogatov  Google Scholar  +1 857 777 8350  
 dmytro@dbogatov.org  Boston, MA  Proudly Ukrainian 




I am originally from Ukraine. I have completed Bachelor's, Master's and Ph.D. in Computer Science. Working on Doctorate, I have defended the thesis "Secure and Efficient Query Processing in Outsourced Databases" [Bog22], advised by George Kollios, Professor at Boston University. I currently work at AWS as a Software Developer. Aside from work, I am serving as a Director for **Mriya Inc.**  non-profit, managing shipments of medical supplies and equipment to Ukrainian military, territorial defense and civilians affected by the war.

## SKILLS

Programming Languages	C#, TypeScript / JavaScript, Python, Swift, Java, C / C++, SQL, $\LaTeX$ , Go, Bash / zsh, x86 ASM
Frameworks	.NET Core, ASP MVC, SGX, xUnit, Angular, boost::, Google test / benchmark (C++)
Common skills	git, Gerrit, docker, HTML, Unix console, VS Code, unit testing
DevOps	Ubuntu / CoreOS / CentOS, Kubernetes, CI / CD, automation, NGINX, GitLab admin
Graduate classes	Advanced Algorithms, Cryptography, Advanced Database Systems, Advanced Operating Systems, Distributed Systems, Compiler Design, Applied Cryptography, Optimization Methods

## EDUCATION

May 2013	High school (Lyceum 157 in Kyiv) graduation with high distinction. GPA 4.00.
Feb 2017	Bachelor of Science in Computer Science from WPI with high distinction. GPA 3.99.
May 2019	Master of Science in Computer Science with specialization in Cyber Security from BU. GPA 4.00.
May 2022	Doctor of Philosophy in Computer Science (Database Security) from BU.  PUBLICATIONS

## PUBLICATIONS

[Cao+24] X. Cao, Y. Li, D. Bogatov, J. Liu, and K. Ren. "Secure and Practical Functional Dependency Discovery in Outsourced Databases". In: *2024 IEEE 40th International Conference on Data Engineering (ICDE)*. 2024, pp. 1645–1658. doi: 10.1109/ICDE60146.2024.00134.

[Ach+22] O. Acharya, D. Bogatov, W. Feng, R. Ghosal, A. Jain, A. O'Neill, and H. Zamani. "TinyIPE: Inner Product Encryption for Nearest Neighbor Search". *Work under peer-review*. Oct. 2022.

[Bog+22] D. Bogatov, G. Kollios, A. O'Neill, and H. Zamani. "Secure Similarity Search in Outsourced Databases". *Work in progress*. Sept. 2022.

[Bog22] D. Bogatov. "Secure and Efficient Query Processing in Outsourced Databases". PhD thesis. May 2022. doi: 10.48550/arXiv.2206.10753.

[Bog+21a] D. Bogatov, A. D. Caro, K. Elkhyaoui, and B. Tackmann. "Anonymous Transactions with Revocation and Auditing in Hyperledger Fabric". In: *Cryptology and Network Security*. Springer International Publishing, 2021, pp. 435–459. doi: 10.1007/978-3-030-92548-2\_23.

[Bog+21b] D. Bogatov, G. Kellaris, G. Kollios, K. Nissim, and A. O'Neill. "Epsolute: Efficiently Querying Databases While Providing Differential Privacy". In: *Proceedings of the 2021 ACM SIGSAC Conference on Computer and Communications Security (CCS '2021)*. 2021. doi: 10.1145/3460120.3484786.

[BKR19] D. Bogatov, G. Kollios, and L. Reyzin. "A Comparative Evaluation of Order-Revealing Encryption Schemes and Secure Range-Query Protocols". In: *Proc. VLDB Endow.* 12.8 (2019), pp. 933–947. doi: 10.14778/3324301.3324309.

[NBK19] O. Narykov, D. Bogatov, and D. Korkin. "DISPOT: A simple knowledge-based protein domain interaction statistical potential". In: *Bioinformatics* (July 2019). doi: 10.1093/bioinformatics/btz587.

[Bog17] D. Bogatov. "Analysis of a Dynamic Voluntary Contribution Mechanism Public Good Game". In: *IPE Journal* 26 (2017).

[BH16] D. Bogatov and J. R. Hennessy. "Data MATTERS: Customizing Economic Indices to Measure State Competitiveness". In: *WPI Library* (2016).

[Nur+15] B. Nurbekov, D. Bogatov, J. S. Xu, and R. J. O'Brien. "Investment Trading And Risk Management: Scientifically Developing and Analyzing Trading Systems". In: *WPI Library* (2015).

## 🌐 CONFERENCES / PRESENTATIONS (★ PRESENTED OR SCHEDULED TO PRESENT A POSTER, PRESENTATION OR A LIGHTNING TALK)

- > **Web Chair for VLDB 2026**
- ★ Encrypted Search Workshop at Brown
- > EUROCRYPT 2019 in Darmstadt, Germany
- ★ Northeastern Database Day 2019 at MIT
- ★ VLDB 2019 in Los Angeles, USA
- ★ CANS 2021 in Vienna, Austria (virtual)
- > Second Workshop on Encryption for Secure Search and other Algorithms
- ★ 23<sup>rd</sup> Annual Issues in Political Economy Conference
- ★ 2016 IEEE MIT Undergraduate Research Technology Conference
- ★ CS Talk at Brown University (by invitation)
- ★ ACM CCS 2021 in Seoul, Korea (virtual)

## ⚖️ PAPER REVIEWS

2019	IEEE ICDE	2022	SIGMOD/PODS	2022	SIGMOD/PODS
2020	SIGMOD/PODS	2022	IEEE ICDE	2023	SIGMOD/PODS
2021	SIGMOD/PODS	2022	SIGMOD Reproducibility	2023	SIGMOD Reproducibility
2021	SIGMOD Reproducibility	2022	IEEE TDSC		


## 📁 PROFESSIONAL EXPERIENCE (RECENT / RELEVANT)

Present May 2022	<b>Software Development Engineer (SDE II, Redshift team), AMAZON WEB SERVICES, Boston, MA</b> <ul style="list-style-type: none"><li>&gt; Query processing, data governance</li><li>&gt; Security and Privacy at Redshift</li><li>&gt; <b>Dynamic Data Masking (DDM)</b> <a href="#">↗</a></li></ul> <p>research databases big data performance distributed systems</p>
October 2021 June 2021	<b>Software Development Engineer Intern (Redshift team), AMAZON WEB SERVICES, Palo Alto, CA (virtual)</b> <ul style="list-style-type: none"><li>&gt; Query processing optimization</li><li>&gt; <b>Row Level Security (RLS)</b> <a href="#">↗</a></li></ul> <p>research databases big data performance distributed systems</p>
November 2020 August 2020	<b>Software Development Engineer Intern (Redshift team), AMAZON WEB SERVICES, Palo Alto, CA (virtual)</b> <ul style="list-style-type: none"><li>&gt; Query processing optimization</li><li>&gt; <b>Row Level Security (RLS)</b> <a href="#">↗</a></li></ul> <p>research databases big data performance distributed systems</p>
December 2019 October 2019	<b>Applied Scientist Intern (Crypto Algorithms team), AMAZON WEB SERVICES, Seattle, WA</b> <ul style="list-style-type: none"><li>&gt; Computations over encrypted data</li><li>&gt; Structured Symmetric Encryption schemes</li></ul> <p>research encrypted search databases</p>
September 2019 July 2019	<b>Cloud &amp; Computing Infrastructure Intern (Crypto), IBM RESEARCH — ZÜRICH, Rüschlikon, ZH, Switzerland</b> <ul style="list-style-type: none"><li>&gt; Anonymous Transactions with Revocation and Auditing in Fabric</li><li>&gt; Developed production-grade cryptographic <b>Go library</b> <a href="#">↗</a></li></ul> <p>research blockchain hyperledger fabric delegatable credentials Go identity mixer</p>
Present September 2014	<b>All my past working experiences, ALL OVER THE WORLD, USA, Ukraine, Switzerland</b> <ul style="list-style-type: none"><li>&gt; Ph.D. Student / Research Assistant @ <b>Boston University</b> (<i>Boston, MA, USA</i>)</li><li>&gt; Web / DevOps developer @ <b>RedwoodEDA</b> (<i>Shrewsbury, MA, USA</i>)</li><li>&gt; Co-founder / web developer @ <b>Shevstream</b> (<i>Kyiv, Ukraine</i>)</li><li>&gt; Web developer @ <b>Worcester Polytechnic Institute</b> (<i>Worcester, MA, USA</i>)</li><li>&gt; Web developer / Quantitative analyst @ <b>TradeStation Securities</b> (<i>Plantation, FL, USA</i>)</li><li>&gt; Senior Teaching Assistant @ <b>Computer Science Department at WPI</b> (<i>Worcester, MA, USA</i>)</li></ul> <p>teaching web development startup devops</p>

## SELECT AWARDS

- ★ pVLDB 2021 Reproducibility Award at BU
- > Chair's Fellowship at BU
- > "Outstanding Junior" at WPI
- > Dean's List all semesters at WPI
- > Charles O. Thompson Scholar at WPI

## ACTIVITIES

- > Director at [Mriya Inc.](#)  non-profit
- > Officer / IT manager at campus org at WPI
- > Career Fair Volunteer at WPI

## LANGUAGES

English   
Ukrainian   
russian 

## PROJECTS

### EPSOLUTE: DIFFERENTIALLY PRIVATE SECURE RANGE QUERIES

SEP 2018 — OCT 2021

[github.com/epsolute](#)  [publication](#) 

Developed ORAM-based differential privacy range and point query engine

[C++](#) [ORAM](#) [differential privacy](#) [range queries](#)

### ANONYMOUS TRANSACTIONS IN BLOCKCHAINS

JUN 2019 — DEC 2021

[github.com/IBM/dac-lib](#)  [publication](#) 

Developed production-grade Go cryptographic library

[Go](#) [blockchains](#) [research](#) [cryptography](#) [privacy](#)

### EVALUATION OF SECURE RANGE QUERY PROTOCOLS

MAY 2017 — FEB 2018

[ore.dbogotov.org](#)  [publication](#) 

Analyzed, implemented and evaluated 5 ORE schemes and 5 protocols

[C#](#) [.NET Core](#) [research](#) [ORE](#) [range query protocols](#)

### STATUS SITE

FEB 2017 — SEP 2017

[status.dbogotov.org](#)  [source code](#) 

A multi-component system for collecting and analyzing the infrastructure health

[C#](#) [.NET Core](#) [ASP MVC](#) [TypeScript](#) [Kubernetes](#) [micro-services](#)

### SHEVASTREAM

JAN 2016 — MAY 2017

[shevastream.com](#)  [source code](#) 

A small retail-oriented startup that sells custom-designed notebooks

[startup](#) [.NET Core](#) [web](#) [C#](#) [PostgreSQL](#)

### MATTERS

JAN 2016 — OCT 2016

[mhtc.org/MATTERS/](#)  [source code](#) 

A web tool that lets users interactively do an extensive analysis over economic data collected for all states

[Spring framework](#) [Java](#) [statistics](#) [data analysis](#) [web](#) [PostgreSQL](#)

### MANDELBROT

SPRING 2016

[try it](#)  [source code](#) 


A major class project. A web tool that interactively generates the Mandelbrot fractal and allows to "walk" and "dive" in it.

[.NET Core](#) [web](#) [C#](#) [TypeScript](#)

### LOTS OF OTHER DIFFERENT PROJECTS

ALL THE TIME

[see my portfolio](#)  [see me on GitHub](#) 

I'm working on different projects all the time! See all of them on my personal website [dbogotov.org](#) 

[have](#) [fun](#)

## ACADEMIC REFEREES

[George Kollios](#) 

Professor, BOSTON UNIVERSITY

@ [gkollios@bu.edu](#)

 [Scholar Profile](#) 

[Leonid Reyzin](#) 

Professor, BOSTON UNIVERSITY

@ [reyzin@bu.edu](#)

 [Scholar Profile](#) 

[Manos Athanassoulis](#) 

Assistant Professor, BOSTON UNIVERSITY

@ [mathan@bu.edu](#)

 [Scholar Profile](#) 