

# Dmytro BOGATOV

Ph.D. from Boston University & SDE 2 at Amazon |  
Database Security, Differential Privacy, Cryptography

 dbogatov.org    github.com/dbogatov    +1 857 777 8350  
 linkedin.com/in/dmytrobogotov    @ dmytro@dbogatov.org  
 Google Scholar    Boston, MA    Proud Ukrainian 



Originally from Ukraine, before completing Ph.D. and en-route M.S. from BU, I have received a B.S. degree from WPI, all in Computer Science. My interests are heavily in the practical and applied domain. The goal of my work is designing systems that are both provably secure, with meaningful quantifiable guarantees, and that are practical. The validation of my work is deploying such a system on a large scale serving many users in public and corporate domains.

## SKILLS

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

## EDUCATION

2013	Kyiv	High school (Lyceum 157) diploma. High distinction.	GPA 4.00.
2017	WPI	Bachelor of Science in Computer Science. High distinction.	GPA 3.99.
2019	BU	Master of Science in Computer Science with a specialization in Cyber Security.	GPA 4.00.
2022	BU	Doctor of Philosophy in Computer Science (Database Security).	

## PUBLICATIONS

[BKOZ22]	D. Bogatov, G. Kollios, A. O'Neill, and H. Zamani. " <i>k-anon</i> : Secure Similarity Search in Outsourced Databases". Apr. 2022.
[BCET21]	D. Bogatov, A. D. Caro, K. Elkhayaoui, and B. Tackmann. "Anonymous Transactions with Revocation and Auditing in Hyperledger Fabric". In: <i>Cryptology and</i>

- Network Security*. Springer International Publishing, 2021, pp. 435–459. doi: 10.1007/978-3-030-92548-2\_23.
- [Bog+21] **D. Bogatov**, G. Kellaris, G. Kollios, K. Nissim, and A. O’Neill. “ $\mathcal{E}$ psolute: 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).
- [NBXO15] 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 (★ PRESENTED A POSTER, PRESENTATION OR A LIGHTNING TALK)

- |   |  |
|---|--|
| ★ Encrypted Search Workshop at Brown    | ➤ Second Workshop on Encryption for Secure Search, Bertinoro, Italy              |
| ➤ EUROCRYPT 2019, Darmstadt, Germany    | ★ 23 <sup>rd</sup> Annual Issues in Political Economy Conference, Washington, DC |
| ★ Northeastern Database Day 2019 at MIT | ★ 2016 IEEE MIT Undergraduate Research Technology Conference, Cambridge, MA      |
| ★ VLDB 2019, Los Angeles, CA            |  |
| ★ CANS 2021, Vienna, Austria (virtual)  |  |
| ★ ACM CCS 2021, Seoul, Korea (virtual)  |  |

## PAPER REVIEWS

2019	IEEE ICDE	2021	SIGMOD Repro	2022	SIGMOD Repro
2020	SIGMOD/PODS	2022	SIGMOD/PODS	2022	IEEE TDSC
2021	SIGMOD/PODS	2022	IEEE ICDE		

## PROFESSIONAL EXPERIENCE (RECENT / RELEVANT)

Present	Software Development Engineer II (Redshift team), <b>AMAZON WEB SERVICES</b> , Boston, MA
May 2022	➤ Security and Privacy <div> <div>research</div> <div>databases</div> <div>big data</div> <div>performance</div> <div>distributed systems</div> </div>

Sep 2021	Software Developer Intern (Redshift team), <b>AMAZON WEB SERVICES</b> , Palo Alto, CA (virtual)
Jun 2021	> Query processing optimization <span>research</span> <span>databases</span> <span>big data</span> <span>performance</span> <span>distributed systems</span>
Nov 2020	Software Developer Intern (Redshift team), <b>AMAZON WEB SERVICES</b> , Palo Alto, CA (virtual)
Aug 2020	> Query processing optimization <span>research</span> <span>databases</span> <span>big data</span> <span>performance</span> <span>distributed systems</span>
Dec 2019	Applied Scientist Intern (Crypto Algorithms team), <b>AMAZON WEB SERVICES</b> , Seattle, WA
Oct 2019	> Computations over encrypted data, SSE schemes <span>research</span> <span>encrypted search</span> <span>databases</span>
Sep 2019	Cloud & Computing Infrastructure Intern (Crypto), <b>IBM RESEARCH — ZÜRICH</b> , Rüschlikon, ZH, Switzerland
Jul 2019	> Anonymous Blockchain Transactions with Revocation and Auditing > Developed production-grade cryptographic <a href="#">Go library</a> <span>research</span> <span>blockchain</span> <span>hyperledger fabric</span> <span>delegatable credentials</span> <span>Go</span>
Present	All my past experiences, <b>ALL OVER THE WORLD</b> , USA, Ukraine, Switzerland
Sep 2014	> Ph.D. / Research Assistant @ <b>Boston University</b> ( <i>Boston, MA, USA</i> ) > Web / DevOps developer @ <b>RedwoodEDA</b> ( <i>Shrewsbury, MA, USA</i> ) > Co-founder / web developer @ <b>Shevastream</b> ( <i>Kyiv, Ukraine</i> ) > Web developer @ <b>Worcester Polytechnic Institute</b> ( <i>Worcester, MA, USA</i> ) > Web developer @ <b>TradeStation Securities</b> ( <i>Plantation, FL, USA</i> ) > Senior Teaching Assistant @ <b>CS Department at WPI</b> ( <i>Worcester, MA, USA</i> ) <span>teaching</span> <span>web development</span> <span>startup</span> <span>devops</span>

## 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](#)

## 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](#)

## LANGUAGES

## SELECT AWARDS

English ● ● ● ● ●  
Ukrainian ● ● ● ● ●  
Russian ● ● ● ● ●

★ pVLDB 2021 Reproducibility Award at BU  
> Chair's Fellowship at BU  
> "Outstanding Junior" at WPI

## “ REFEREES

[George Kollios](#)

Professor, BU

@ gkollios@bu.edu

 [Scholar Profile](#)

[Leonid Reyzin](#)

Professor, BU

@ reyzin@bu.edu

 [Scholar Profile](#)

[Manos Athanassoulis](#)

Assistant Professor, BU

@ mathan@bu.edu

 [Scholar Profile](#)