Curriculum Vitæ

Dmytro BOGATOV

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

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🎓 Google Scholar   ♀ Boston, MA   ℹ Proud 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. Aside from work, I am serving as a Director and Secretary 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	**C#**, **TypeScript** / JavaScript, **Python**, Swift, Java, C/**C++**, HTML, **SQL**, 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

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

[BKOZ22] D. **Bogatov**, G. Kollios, A. O'Neill, and H. Zamani. "k-*anon*: Secure Similarity Search in Outsourced Databases". Apr. 2022.

[BCET21] D. **Bogatov**, A. D. Caro, K. Elkhiyaoui, 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+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
- › EUROCRYPT 2019, Darmstadt, Germany
- ★ Northeastern Database Day 2019 at MIT
- ★ VLDB 2019, Los Angeles, CA
- ★ CANS 2021, Vienna, Austria (virtual)
- ★ ACM CCS 2021, Seoul, Korea (virtual)
- › Second Workshop on Encryption for Secure Search, Bertinoro, Italy
- ★ 23$^{\text{rd}}$ Annual Issues in Political Economy Conference, Washington, DC
- ★ 2016 IEEE MIT Undergraduate Research Technology Conference, Cambridge, MA

⚖ 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	2023	SIGMOD/PODS

💼 PROFESSIONAL EXPERIENCE (RECENT / RELEVANT)

Present

May 2022

Software Development Engineer II (Redshift team), AMAZON WEB SERVICES, Boston, MA
- › Query processing optimization
- › Security and Privacy at Redshift

`research` `databases` `big data` `performance` `distributed systems`

Sep 2021

Jun 2021

Software Developer Intern (Redshift team), AMAZON WEB SERVICES, Palo Alto, CA (virtual)
- › Query processing optimization
- › Row Level Security (RLS) ↗

`research` `databases` `big data` `performance` `distributed systems`

Nov 2020

Aug 2020

Software Developer Intern (Redshift team), AMAZON WEB SERVICES, Palo Alto, CA (virtual)
- › Query processing optimization
- › Row Level Security (RLS) ↗

`research` `databases` `big data` `performance` `distributed systems`

Dec 2019

Oct 2019

Applied Scientist Intern (Crypto Algorithms team), AMAZON WEB SERVICES, Seattle, WA
- › Computations over encrypted data, SSE schemes

`research` `encrypted search` `databases`

Sep 2019

Jul 2019

Cloud & Computing Infrastructure Intern (Crypto), IBM RESEARCH — ZÜRICH, Rüschlikon, ZH, Switzerland
- › Anonymous Blockchain Transactions with Revocation and Auditing
- › Developed production-grade cryptographic Go library ↗

`research` `blockchain` `hyperledger fabric` `delegatable credentials` `Go`

Present
Sep 2014

All my past experiences, ALL OVER THE WORLD, USA, Ukraine, Switzerland
- › Ph.D. / Research Assistant @ **Boston University** (*Boston, MA, USA*)
- › Web / DevOps developer @ **RedwoodEDA** (*Shrewsbury, MA, USA*)
- › Co-founder / web developer @ **Shevastream** (*Kyiv, Ukraine*)
- › Web developer @ **Worcester Polytechnic Institute** (*Worcester, MA, USA*)
- › Web developer @ **TradeStation Securities** (*Plantation, FL, USA*)
- › Senior Teaching Assistant @ **CS Department at WPI** (*Worcester, MA, USA*)

`teaching` `web development` `startup` `devops`

💻 Projects (recent / relevant)

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.dbogatov.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.dbogatov.org ✔   source code ✔

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

`C#` `.NET Core` `ASP MVC` `TypeScript` `Kubernetes` `micro-services`

🌐 Languages

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

🏆 Select Awards

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

💬 Referees

George Kollios ✔	Leonid Reyzin ✔	Manos Athanassoulis ✔
Professor, BU	*Professor*, BU	*Assistant Professor*, BU
@ gkollios@bu.edu	@ reyzin@bu.edu	@ mathan@bu.edu
🎓 Scholar Profile ✔	🎓 Scholar Profile ✔	🎓 Scholar Profile ✔