

Dmytro BOGATOV

PhD candidate at Boston University |

Database Security, Differential Privacy, Secure Range Queries, ORAM

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Born in Ukraine in the past millennium



Originally from Ukraine, I started an undergraduate CS program at WPI. During the program, I have had a number of internships and have completed many research and industry-oriented projects. I have graduated from WPI in 2017 with nearly perfect GPA and have enrolled at BU for a 5-years Ph.D. program in Data Science. In the first two years I have completed the Master's program in Cyber Security. I have passed the Qualifying Exam and Prospectus, and I am set to defend in early April 2022. I am interested in Secure Range Queries, Differential Privacy, ORAM and Zero-Knowledge Proofs.

SKILLS

Programming Languages C#, TypeScript / JavaScript, Python, Java, C/C++, HTML, SQL, LaTeX, Go, Bash, x86 ASM
Frameworks .NET Core, ASP MVC, SGX, xUnit, Angular, boost::
Common skills git, Gerrit, docker, bash, 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

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

PUBLICATIONS

[Bog+21a] 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+21b] D. Bogatov, G. Kellaris, G. Kollios, K. Nissim, and A. O'Neill. "Epsilon: 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 (★ PRESENTED OR SCHEDULED TO PRESENT A POSTER, PRESENTATION OR A LIGHTNING TALK)

- ★ 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
- ★ 23rd Annual Issues in Political Economy Conference
- ★ 2016 IEEE MIT Undergraduate Research Technology Conference
- ★ ACM CCS 2021 in Seoul, Korea (virtual)

PAPER REVIEWS

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

PROFESSIONAL EXPERIENCE (RECENT / RELEVANT)

September 2021 | Software Developer Intern (Redshift team), AMAZON WEB SERVICES, Palo Alto, CA (virtual)
June 2021 | Query processing optimization
research | databases | big data | performance | distributed systems

November 2020 August 2020	Software Developer Intern (Redshift team), AMAZON WEB SERVICES , Palo Alto, CA (virtual) > Query processing optimization research databases big data performance distributed systems
December 2019 October 2019	Applied Scientist Intern (Crypto Algorithms team), AMAZON WEB SERVICES , Seattle, WA > Computations over encrypted data, SSE schemes research encrypted search databases
September 2019 July 2019	Cloud & Computing Infrastructure Intern (Crypto), IBM RESEARCH — ZÜRICH , Rüschlikon, ZH, Switzerland > Anonymous Transactions with Revocation and Auditing in Fabric > Developed production-grade cryptographic Go library research blockchain hyperledger fabric delegatable credentials Go identity mixer
Present September 2014	All my past working experiences, ALL OVER THE WORLD , USA, Ukraine, Switzerland > PhD Student / 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 / Quantitative analyst @ TradeStation Securities (Plantation, FL, USA) > Senior Teaching Assistant @ Computer Science Department at WPI (Worcester, MA, USA) teaching web development startup devops

PROJECTS

EPSOLUTE: DIFFERENTIALLY PRIVATE SECURE RANGE QUERIES github.com/epsolute publication Developed ORAM-based differential privacy range and point query engine C++ ORAM differential privacy range queries	SEP 2018 — OCT 2021
ANONYMOUS TRANSACTIONS IN BLOCKCHAINS github.com/IBM/dac-lib publication Developed production-grade Go cryptographic library Go blockchains research cryptography privacy	JUN 2019 — DEC 2021
EVALUATION OF SECURE RANGE QUERY PROTOCOLS ore.dbogotov.org publication Analyzed, implemented and evaluated 5 ORE schemes and 5 protocols C# .NET Core research ORE range query protocols	MAY 2017 — FEB 2018
STATUS SITE 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	FEB 2017 — SEP 2017
LOTS OF OTHER DIFFERENT PROJECTS see my portfolio see me on GitHub I do different projects all the time. See all of them on my personal website dbogotov.org have fun	ALL THE TIME

LANGUAGES

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

SELECT AWARDS

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

ACTIVITIES

- > Officer / IT manager at RSSA organization at WPI
- > Career Fair Volunteer at WPI

REFEREES

[George Kollios](#)

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