# Alessandro N. Baccarini

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| CONTACT INFORMATION | 301C Davis Hall<br>Department of Computer Science and Eng.<br>University at Buffalo<br>338 Davis Hall<br>Buffalo, NY 14260 | anbaccar@buffalo.edu<br>Website |

**RESEARCH INTERESTS**

Applied Cryptography, Privacy Preserving Machine Learning, Internet of Things (IoT) Security.

**EDUCATION**

**University at Buffalo**, Buffalo, NY
Ph.D., Computer Science, *Expected:* Spring 2024.
- Advisor: Marina Blanton

**Fordham University**, Bronx, NY
M.S., Cybersecurity, Spring 2019.
- Topic: *Encryption Algorithms for Low-Resource IoT devices*
- Advisor: Thaier Hayajneh

B.S., Physics, Mathematics Minor, May 2017.
- Advisors: Vassilios Fessatidis and Christopher Aubin,

**RESEARCH EXPERIENCE**

**Ph.D. Student**                                                         Fall 2020 – Present
University at Buffalo
    Areas:
- *Secure multi-party computation and its applications in privacy preserving machine learning*

University at Buffalo
Advisor: Marina Blanton

**Research Assistant**                                          Summer 2017 – Spring 2019
Fordham Center for Cybersecurity
    Areas:
- *Encryption techniques on IoT devices*
- *Blockchain applications in healthcare*
- *Biometric authentication using machine learning*

Fordham University
Advisor: Thaier Hayajneh

**PUBLICATIONS**

1. **Baccarini, A.N.**, Blanton, M., Yuan, C. "Multi-Party Replicated Secret Sharing over a Ring with Applications to Privacy-Preserving Machine Learning." IACR Cryptology ePrint Archive Report 2020/1577. 2020.

2. **Baccarini, A.N.**, Hayajneh, T. "Evolution of Format Preserving Encryption on IoT Devices: FF1+." *Proceedings of the 52nd Hawaii International Conference on System Sciences.* University of Hawaii at Manoa. Honolulu, HI. 2019.

3. Alhayajneh, A., **Baccarini, A.N.**, Weiss, G.M., Hayajneh, T., Farajidavar, A. "Biometric Authentication and Verification for Medical Cyber Physical Systems." *Electronics*, 7(12), 436. 2018.

4. Griggs, K.N., Ossipova, O., Kohlios, C.P., **Baccarini, A.N.**, Howson, E.A., Hayajneh, T. "Healthcare Blockchain System Using Smart Contracts for Secure Automated Remote Patient Monitoring." *J Med Syst*, 42: 130. 2018.

5. Alhayajneh, A., **Baccarini, A.N.**, Hayajneh, T. "Quality of Service Analysis of VoIP Services." *IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON) 2018.* Columbia University. New York, NY. 2018.

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| Teaching Experience | **Instructor**<br>CSE 116 – Computer Science 2<br>Department of Computer Science & Eng.<br>University at Buffalo | Summer 2020/21 |
| | **Teaching Assistant**<br>CSE 4/529 – Algs. for Modern Comp. Systems<br>　Fall 2020/21<br>　Professor: Russ Miller<br>CSE 4/531 – Analysis of Algorithms I<br>　Spring 2021<br>　Professor: Shi Li<br>CSE 542 – Software Eng. Concepts<br>　Spring 2020<br>　Professor: Matthew Hertz<br>Department of Computer Science & Eng.<br>University at Buffalo | Spring 2019 – Present |
| | **Instructor**<br>PHYS 1511-12 – Physics I and II Labs<br>Department of Physics & Eng. Physics<br>Fordham University | Fall 2017 – Spring 2019 |
| | **Tutor**<br>Calculus, Finite Mathematics<br>Collegiate Science and Technology Entry Program (CSTEP)<br>Fordham University | Fall 2017 – Spring 2018 |
| | **Teaching Assistant**<br>PHYS 1511, 1512 – Physics I and II Labs<br>Department of Physics & Eng. Physics<br>Fordham University | Summer 2016 – Spring 2017 |

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| Awards | Student Awards – Fordham University, Graduate School | |
| | • GSAS Centennial Scholarship | 2017 – 2019 |
| | Student Awards – Fordham University, College of Rose Hill | |
| | • Fordham Jouges Scholarship | 2013 – 2017 |
| | • Eugene O'Brien SJ Scholarship | 2013 – 2017 |
| | • Edwin Mellett Scholarship | 2014 – 2017 |

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| Skills & Interests | *Languages & Software*: C/C++, Python, Scala, LaTeX, Vim.<br>*Operating Systems*: Linux, macOS, Windows. |

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| Coursework | **University at Buffalo**<br>• CSE 521 (f19) – Operating Systems<br>• CSE 531 (f19) – Analysis of Algorithms I<br>• CSE 589 (s20) – Modern Networking Concepts<br>• CSE 664 (s20) – Applied Cryptography<br>• CSE 632 (f20) – Analysis of Algorithms II<br>**Fordham University** |

- CISC 5009 – Network Essentials
- CISC 5750 – Information Security and Ethics
- CISC 5800 – Machine Learning
- CISC 6525 – Artificial Intelligence
- CISC 6660 – Applied Cryptography
- CISC 6680 – Intrusion Detection
- CISC 6750 – IoT Forensics and Security
- CISC 7050 – Penetration Testing

REFERENCES     Available upon request.