

JAODUN MUNTASIR

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EDUCATION

Bachelor of Science (Computer Science)

Faculty of Informatics, Eotvos Lorand University

Budapest, Hungary

Class of 2025

- **Stipendium Hungaricum Scholarship Recipient (2022):** Full-ride government funded scholarship for 3 years of undergraduate studies at ELTE.
- **Thesis:** A Blockchain-Based Rental Loan System Using Security Deposits as Collateralized Assets (Focus: model design, security assumptions, adversarial risk analysis, game theory analysis)
- **Research Interests:** Algorithm Optimization, Blockchain, FinTech, DeFi, Cryptography, Zero-Knowledge Proofs (ZKP), Cryptographic Protocol Design, Formal Security Guarantees, Federated Learning
- **Relevant Courses:** Algorithms & Data Structures, Object Oriented Programming, Cryptography and Security, Machine Learning and AI, Concurrent Programming, Development of Financial IT Systems.
- **Grade:** Excellent

RESEARCH & PUBLICATIONS

- J. Muntasir and K. Bouafia (2025).
State Machine Architecture for Dual-State Financial Assets.
IEEE 23rd Jubilee International Symposium on Intelligent Systems and Informatics (SISY), Subotica, Serbia, 2025. - **Peer-reviewed Conference Paper**
<https://doi.org/10.1109/SISY67000.2025.11205404>.
- Jaodun, M., & Bouafia, K. (2025).
Analysis and Evaluation of a Blockchain-Based Framework for Decentralized Rental Agreements and Dispute Resolution.
MDPI Blockchains, 3(2), 8. - **Peer-reviewed Journal Article**
<https://doi.org/10.3390/blockchains3020008>

EMPLOYMENT EXPERIENCE

Lecturer | Daffodil International University

Sep 2025 - Present

- Teaching a full 12-credit course load each semester across core CS/SWE subjects, with emphasis on algorithms, security, and system design
- Conducting research on zero-knowledge proof (ZKP) circuit optimization for common cryptographic primitives, with intent to publish in peer-reviewed venues
- Supervising undergraduate thesis projects and providing academic advising to 200+ undergraduate students
- Collaborating on institution-affiliated research, contributing to applied and theoretical security-focused projects

Frontend Developer | IUX IT Pty Ltd

Sep 2024 - Aug 2025

- Developed and maintained distributed web-based systems with attention to data integrity, access control, and secure system behavior
- Implemented backend-integrated application logic and API workflows supporting reliable data exchange and system correctness
- Gained experience working with real-world system constraints relevant to secure and scalable system design

Software Engineer Intern | ELTE IK Innovation Lab

Jul 2024 - Jan 2025

- Designed and implemented a preference-based shift scheduling algorithm for pink-collar jobs, emphasizing constraint satisfaction, fairness, and optimization under real-world workforce constraints
- Conducted algorithmic analysis of employee preference modeling and shift allocation strategies, and validated algorithmic behavior through empirical evaluation in a prototype workforce management system
- Contributed to backend system architecture and API design supporting algorithm-driven decision logic, collaborating in an academic-industrial research environment to iteratively refine the solution

TECHNICAL SKILLS

Programming Languages: C, C#, Java, JavaScript, TypeScript, PHP, Python, Solidity

Frameworks & Libraries: Next.js, React, Laravel, Node.js, Express.js, Angular, Flask, REST API, WordPress

Databases & Tools: MySQL, PL/SQL, SQLite, Git, Linux, AWS (LightSail, SES), VPS, CI/CD, Firebase

Others: CMS, SEO, IBM SPSS, Latex

Areas of Expertise: Full Stack Software Development, DApp Development, Smart Contract Development, Object Oriented Programming, Unit Testing

RESEARCH PROJECTS & SYSTEMS

Decentralized Rental Agreement & Dispute Resolution System

Journal Publication — MDPI Blockchains, 2025

- Designed a blockchain-based rental agreement protocol with formally defined contract states and adversarial dispute scenarios
- Proposed a trust-minimized decentralized dispute resolution mechanism grounded in decentralized justice principles
- Analyzed security assumptions and protocol behavior under adversarial conditions, focusing on fairness, liveness, and manipulation resistance

Decentralized Rental Loan Protocol Using Collateralized Security Deposits

Bachelor's Thesis — ELTE

- Designed a decentralized loan protocol treating rental security deposits as on-chain collateralized financial assets
- Modeled protocol state transitions and incentive structures to ensure correctness and resistance to strategic abuse
- Analyzed economic and security trade-offs in collateral liquidation, default handling, and borrower-lender fairness

Preference-Based Shift Scheduling Algorithm for Pink-Collar Jobs

Research & Prototype System

- Co-designed a preference-based scheduling algorithm addressing fairness, workload balance, and constraint satisfaction
- Modeled employee preferences and organizational constraints under competing optimization objectives
- Refined and evaluated algorithmic behavior through empirical testing in a prototype system

Zero-Knowledge Proof Circuit Optimization for Common Cryptographic Primitives

Ongoing Research

- Researching optimization of ZKP arithmetic circuits for commonly used cryptographic primitives
- Analyzing circuit representations to reduce constraint count, prover complexity, and verification overhead
- Investigating efficiency-security trade-offs for practical deployment in privacy-preserving systems

HONORS & AWARDS

Stipendium Hungaricum Scholarship

| *Government of Hungary*

Full-ride scholarship for 3 years of undergraduate studies at ELTE

3rd Place - Scientific Students' Associations Conference 2025 (TDK)

| *Eotvos Lorand University*

Recognition for research work on Blockchain and Decentralized Finance among 39 research projects

2nd Place - Digital Entrepreneurship for Participatory Democracy

| *Portfolio Erasmus+ Project*

European Entrepreneurship Micro-minor competition organized by 5 European universities

Runner-up - 5th CASSINI Hackathon: Space for Defence & Security

| *EU Space Programme*

Inter Europe competition using EU Space data from Copernicus, Galileo and EGNOS

Belt and Road Initiative Scholarship

| *Government of People's Republic of China*

Full-ride scholarship for 4 years at Sichuan University

Dean's Scholarship & Drexel Grant

| *Drexel University, USA*

50% scholarship towards 4 years of undergraduate studies at Drexel University, USA

Finalist - Budapest Open 2023

| *Budapest Debate Union*

Inter European University Debate Tournament

ADDITIONAL INFORMATION

Languages: Bengali (Native), English (Fluent [IELTS: 8.00]), Hindi (Fluent), Urdu (Fluent), Hungarian (Beginner), Spanish (Beginner)

Skills: Public Speaking, Content Writing, Presentation Skills, Communication, Research, Team Management

Activities: Debater at Budapest Debate Union, Ex-General Secretary at Adamjee Cantonment College Debating Club, Ex-President at Adamjee School Cultural Club