

Maxim Bortnikov

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[🔥 instructables.com/member/Northstrix](https://www.instructables.com/member/Northstrix) | [📝 medium.com/@Northstrix](https://medium.com/@Northstrix) | [🐙 github.com/Northstrix](https://github.com/Northstrix)

Skills

- C | C++ | Embedded C | C# | .NET | Java | Python | SQLite | MySQL | PostgreSQL | HTML/CSS | AES-256 | Serpent | Blowfish | 3DES
- Google Firebase | HMAC-SHA256 | ECDSA | Digital Signatures | Cryptography | Virtual Machines | Networks | Linux | Microcontrollers
- Embedded Systems | ESP32 | Teensy 4.1 | STM32 | Backend | Frontend | Cryptography | Block Ciphers | Data Security | Data Integrity
- JavaScript | Whirlpool | Swift | Vapor | HMAC-SHA512 | React | Docker | ChaCha20 | npm | hash-wasm | mipher | Next.js | Argon 2 id
- Languages: Fluent: English, Russian | Conversational: Hebrew, German | Beginner: Spanish

Work Experience

- **Unpaid Intern @ Bazium:** Learned to make websites using Bazium website builder; Got familiar with YAMM (Yet Another Mail Merge); Learned the cold outreach technique; Developed localization tool compatible with Bazium-built websites (on my own initiative).
1/2025 - 3/2025

Projects

- **Plum Cave:** Built a cloud backup solution that employs the "ChaCha20 + Serpent-256 CBC + HMAC-SHA3-512" authenticated encryption scheme for data encryption and ML-KEM-1024 for quantum-resistant key exchange :: Next.js | End-to-end encryption | Firebase
Link: <https://plum-cave.netlify.app/>
- **Namer UI:** Assembled a collection of reusable Typescript components for Next.js.
Link: <https://namer-ui.netlify.app/>
- **In-Browser File Encrypter:** Made a file encrypter that enables the user to encrypt their files locally in the browser :: HTML | CSS
JavaScript | AES-256 CBC | HMAC-SHA512 | PBKDF2 (SHA-512) | crypto-js
Link: <https://northstrix.github.io/In-Browser-File-Encrypter/V1.0/web-app.html>
- **Midbar:** Created a fully-functional open-source data vault from scratch :: Embedded C | AES-256 | ESP32 | Blowfish | RFID | STM32F407
Serpent | HMAC-SHA256 | ESP8266 | Google Firebase | Teensy 4.1 | Raspberry Pi Pico | IL9341 | ST7789 | RTL8720DN
WebFlash: <https://northstrix.github.io/Midbar-ESP32-CYD-Firebase-Edition/flash>
Wokwi Simulation: <https://wokwi.com/projects/374498956604379137>
- **Lantern:** Made a functional wireless controller for the addressable RGB LED strip :: Embedded C | SPIFFS | ESP32 | ESP8266 | Serpent
ESP NOW | Nintendo Wii Nunchuk | TFT_eSPI | Sprite animation | Brightness Control

Experience

| Maker | <u>Instructables</u> | 1/2021 - Current |
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- Produced more than 70 tutorials involving various microcontrollers, from ESP32 to Teensy 4.1.

| Independent Developer | <u>GitHub</u> | 3/2019 - Current |
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- Created more than 60 repositories with open-source code written in several programming languages.

Education

| Secondary Education | <u>Rubtsovsk Agrarian-Industrial College</u> | <i>Rubtsovsk, Altai</i> | 9/2016 - 7/2020 |
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- Computer Systems and Clusters

| Bachelor of Computer Science | <u>Altai State Technical University</u> | <i>Barnaul, Altai</i> | 9/2020 - 7/2024 |
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- Major in Informatics and Computational Devices

Certifications

- [Cryptography I by Stanford University offered via Coursera](#) (2/2020)
- [Information Security: Context and Introduction by University of London offered via Coursera](#) (3/2020)
- [Industrial IoT on Google Cloud by Google Cloud offered via Coursera](#) (5/2020)
- [Astronomy: Exploring Time and Space by University of Arizona offered via Coursera](#) (6/2020)
- [Develop and Deploy Windows Applications on Google Cloud by Google Cloud offered via Coursera](#) (4/2021)