Mark Bestavros

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WORK EXPERIENCE

Current: Software Engineer, Red Hat   **(June'19-Present)**

- Current team: Enterprise Contract – developing tools to verify build provenance and ensure enterprise policy compliance, including SLSA
- Previously: Office of the CTO Security – bootstrap nascent open-source security ideas into strong upstream community projects with a sustained emphasis on secure supply chains
- Notable project contributions: **Sigstore, Keylime, in-toto, Enarx**
  - **in-toto/Keylime/Sigstore**: Designed a prototype of end-to-end secure supply chain delivery using Sigstore, in-toto, and Keylime
    - Repo. Demoed at KubeCon 2022 during in-toto maintainer track talk.
  - **Keylime**: Led an overhaul of Keylime's runtime policy engine, including an API revamp and format/backend modernization.
  - **Keylime/in-toto**: Implemented DSSE signature support into Keylime [link]
  - **Keylime**: Implemented a signing infrastructure overhaul [link, link]
  - **Sigstore**: Implemented AWS CloudHSM support into Fulcio [PR]
  - **Sigstore**: Wrote a number of Python APIs for Sigstore/Rekor interaction, including some utilizing the sigstore-python API [link]
  - **Sigstore**: Co-author for cosign-installer Github Action [link]
  - **Sigstore**: Authored some early Github Actions for keyless sign/verify [link]
  - **Enarx**: Created an open source project management toolset on GH Actions
- Conferences: Red Hat Day Turkey 2022 (speaker), KubeCon 2022 (remote speaker, mentioned above), KubeCon 2021 (in person, Sigstore booth)
- Notable blog posts: Synthetic Media and Secure Supply Chains, Kubecon diary, Sigstore in a nutshell, Enarx and Trust

Software Engineering Intern, Part-Time, Red Hat   **(Oct'18-June'19)**

- Contributed to Keylime Rust agent: cloud-native remote attestation w/ TPMs [Github]

Software Developer Intern, MITRE   **(Summer'18)**

- Contributed to the PSM, an open-source healthcare application [Github]
- Participated in the MITRE eCTF, a hands-on security/crypto experience

Android Developer Intern, VMware   **(Summer'17)**

- Worked on the Workspace ONE Android app, prototyping and testing new features

Developer Intern, Hitachi Data Systems   **(Summer'16)**

- Worked with the HCP Anywhere team to update/modernize their Android app

Course Assistant, Introduction to Computer Science I and II   **(Sep'15 - Dec'16)**

- Held office hours, ran a lab, taught key skills such as debugging and code etiquette

TECHNICAL SKILLS

Python (*Experienced — primary language used for most work projects, including Keylime*)
Go (*Familiar — used for some projects at Red Hat, particularly around Sigstore/secure software supply chain*)
Git (*Experienced — used every day, in personal and professional contexts*)
CI/Github Actions/Project Automation (*Experienced — primary responsibility on the Enarx project*)
Linux/Shell/Containers (*Experienced — used every day at Red Hat and during my work at MITRE for Summer '18*)
Java/Android (*Experienced — first language; highly used in coursework; worked with Android for two internships*)
Others: *web (personal projects), Rust (for a short time at Red Hat)*

MENTORSHIP

Industry Mentor for BU Spark! Innovation Fellows Program   **(Fall'19 – Present)**

- Work with a different 4-5 student team every semester to incubate a project from idea to prototype to finished product. I provide technical and project management guidance.

- Occasionally run workshops on topics like intermediate Git/Github, shell, and others
- As of spring 2023, I've mentored eight semesters of student projects – and counting!

EDUCATION

BA/MS Degree in Computer Science from Boston University **(Class of 2019)**

Unique Coursework Highlights
- Security/Cyber Law (Applied Crypto, Network Security, National Security and Technology)
- Data Science (Applied Urban Data Mechanics, Differential Privacy)
- Systems (Fundamentals of Computing Systems, Networks)
- Theory (Advanced Algorithms, Crypto Theory)

COOL UNDERGRADUATE RESEARCH

Project: Algorithmic Optimizations of Boston's Public Bus Network [poster] **(Fall'16 – Fall'17)**
- Started as a Data Mechanics [link] class project to improve Boston's public bus system
- Developed optimizations for bus stop placement and efficient bus allocation

EXTRACURRICULAR ACTIVITIES, HACKATHONS, STUDY ABROAD

Organizer, BostonHacks [link] **(Aug'15 – Dec'18)**
- BU's student-run hackathon, attracting hundreds of students from around the US

Board Member, BUILDS [link] **(Sep'16 – April'18)**
- Boston University's student-run hackerspace, where I ran/taught workshops

Rabat, Morocco Intensive Arabic Language Study Abroad Program **(Summer'15)**
- Eight-week study abroad program with intense focus on Arabic language
- Immersive learning: homestay living w/ Moroccan family, conversed in Arabic/French

Boston University Pep Band 1st Trombonist **(Sep'14 – Dec'17)**
- Perform at university engagements and sporting events

Hack UMass **(April'15)**
- Team project: Leap Motion-powered musical instrument; finalist, top 8

OTHER NOTABLE ACTIVITIES

American Music Abroad Program **(Summer'11)**
- High-school concert tour of Europe
- Played orchestral pieces for the public in France, Germany, Austria, and Switzerland

HOBBIES (not professionally relevant, but feel free to ask!)

Tinkering with Technology
- Examples: setting up a Raspberry Pi NAS, running Pi-Hole on my home network, tinkering with Linux and Android, writing user scripts for Miniflux for more efficient news reading. It's fun!

Urbanism/Transit/Biking
- I'm a huge train/transit nerd, especially around Boston's MBTA. Ask me for fun facts if you live in Boston! I like to follow what's new in the city and area with regards to pedestrian/biking infrastructure, and am constantly rooting for a better T.

Gaming
- While at Red Hat, I organized and lead a Counter-Strike: Global Offensive team participating in the CEA, a corporate charity esports league. It was a lot of fun, a great way to meet people at the company I wouldn't have otherwise, and for a great cause!
- In addition to playing games, I also really enjoy modding them! If a game has official modding support, I'm liable to sink way too much time into it. I've also taken the time to write my own mods in the past.

Music
- I play trombone!

Hiking/Skiing

- I'm not an *intense* hiker, but I enjoy a good climb every now and again. I've also learned to ski in the past few years.

Travel
- I'm not great at organizing my own travel, but I do enjoy it when it happens – either through work, or with friends. Last year I was fortunate enough to visit both Turkey and Scandinavia!