



Cryptography/Cybersecurity Engineer for ION Mobility

South East Asia is home to 200 million motorcycle riders. Motorcycles are a way of life from Jakarta to Bali, from Ho Chi Minh to Hanoi and more; and are the fundamental economic pillar for these diverse and vibrant cities.

The Company

ION Mobility is an electric mobility technology and product company with teams across Singapore, Indonesia and China.

We design, assemble and support connected and smart electric motorcycles for Southeast Asian consumers and businesses, starting with the Indonesian market. There is no reason why the trusty motorcycle shouldn't join the ranks of devices that form part of our digital flow in the Internet era. Our data-driven approach will enable us to drive a superior user experience and develop better-received products over time.

Co-founders James Chan, Joel Chang, Chris Riether and Xian-yi Wu are on a mission to accelerate the transition from Internal Combustion Engine (ICE) to Electric as its energy source for the over 200 million ICE motorcycle population in Southeast Asia, so as to drive a sustainable future for generations to come. Southeast Asia is the world's third largest motorcycle market (behind India and China), offering us a large canvas upon which our team can innovate and create impact for consumers and business fleet operators.

Media Links

28 May 2020 "[This Singaporean startup thinks electric bikes are Asia's future](#)" - GovInsider

16 May 2020 "[Bringing electric motorbikes to Southeast Asia's masses](#)" - TechinAsia

11 May 2020 "[Electric motorcycles made and designed in Singapore set to rev up Southeast Asia](#)" - ChannelNewsAsia

You can read more about us at www.ionmobility.asia

Job Overview

Our growing company is seeking to hire a Cryptography Engineer who will work to develop an end-to-end security solution for our smart electric motorcycles.

As part of the team, you will lead and explore cryptographic methods that are fundamental to the security of CAN communications, PKE security for the embedded systems, Over-The-Air software updates, user/mobile app security and into our backend cloud services.



A PhD, masters or related qualifications demonstrating specialization in cryptography is required.

To succeed in this position, candidates should exhibit exceptional understanding of cryptography and problem-solving skills. Deep understanding of limitations in embedded systems cryptography, keyless entry solutions, PKI, key exchange and key management systems is desired. You should be resourceful, analytical and display good communication and team working abilities.

Previous experience in cryptography, cyber security, homomorphic encryption or quantum-safe algorithms are good-to-have bonuses.

Responsibilities and Duties

- Reports to and work closely with ION's Director of Software and ION's Lead Electronics Engineer
- Collaborating in a cross functional organization with ION employees to achieve team goals and milestones
- Directly developing and verifying the architecture of end-to-end security for ION's electric motorcycle
- Directly developing cryptographic libraries and APIs for use as part of ION's electric motorcycle
- Verifying/testing the algorithms/implementations used with on-vehicle and in our backend cloud services
- Creating documentation to explain the security and benefits various solutions
- Writing patents and academic papers where appropriate

Qualifications and Requirements

- PhD or masters in mathematics, cryptography, or a related field
- Strong understanding of cyber security and embedded cryptography
- Knowledge of C, C++ or Python and experience with software development
- Knowledge of or experience with Agile development methodologies is a bonus
- A willingness to learn new programming languages and technologies
- Adaptability and strong problem-solving skills
- At least 2 years of experience in designing security algorithms and cryptanalysis on various algorithms
- At least 1 year experience in C/C++ programming language

Be part of a fast growing team, building an electric motorcycle that will create a positive impact for millions of lives in South East Asia.

Get in touch at careers@ionmobility.asia