

COMPUTER SCIENCE TRIPOS Part IA – 2023 – Paper 2

6 Software and Security Engineering (rja14)

You have joined a startup whose product is a low-cost home security camera attached to wifi, which when armed will upload video streams to your company's server on detecting motion. The system's unique selling proposition is that the server will use a machine learning model that your founder has developed to identify suspicious activity. It will then notify the customer who will be able to view the video stream on a mobile phone app, and get your dispatcher to call the emergency services if needed.

- (a) What would be your threat model for such a system? [4 marks]
- (b) What would be involved in protecting the communications? [4 marks]
- (c) How would you ensure that you enrol the right app to each camera? [4 marks]
- (d) How would you recover from a lost phone or forgotten password? [4 marks]
- (e) How would your design enable a victim of stalking or abuse to prevent access by a former intimate partner? [4 marks]