**Assignment MIS**

**Collins Odeny Bit/0321/2016**

**Technological innovation**

**Company Samsung**

Samsung is a South Korean multinational conglomerate headquartered in Samsung Town, Seoul. It comprises numerous affiliated businesses, most of them united under the Samsung brand, and is the largest South Korean chaebol. Samsung was founded by Lee Byung-chul in 1938 as a trading company.

**Samsung**, South Korea company that is one of the world’s largest producers of electronic devices. Samsung specializes in the production of a wide variety of consumer and industry electronics, including appliances, digital media devices, semiconductors, memory chips, and integrated systems. It has become one of the most-recognizable names in technology and produces about a fifth of South Korea’s total exports.

**Innovations**

They have invested in many areas of innovation such as:

* Digital Health
* Autonomous Mobility
* Artificial intelligence
* Data Infrastructure
* Internet of things
* Security and privacy

1. **Digital Health**

**SSIC Research: Detecting AFib with consumer wearables**

Chronic disease impacts millions of people all around the world. Heart disease is the leading cause of death in the United States, with more than 600,000 Americans dying of heart disease each year. At Samsung, as we look for ways to improve people’s lives, this is one of the statistics that stands out to us.

Atrial fibrillation (AFib) is a heart abnormality where the heart’s two upper chambers beat irregularly and out of rhythm with the two lower chambers. While it isn’t necessarily a problem in itself, AFib can increase the risk of stroke and other heart issues. It also happens to be the most common cardiac arrhythmia problem. According to CDC, an estimated 2.7–6.1 million people in the United States have AFib. With the aging of the U.S. population, this number is expected to increase.

Traditionally, AFib is detected by electrocardiogram (ECG). While an ECG-based approach achieves very high accuracy in AFib detection, monitoring ECG signals requires sophisticated devices, and involve multiple electrodes on the patient, and active participation by the patient and a medical team.

One challenge with AFib is detecting it early so it can be monitored and dealt with. With the smart watches, it is possible to acquire heart rhythm using optical sensors. The obvious question is, could smart watch sensors be used to detect signs of AFib? If so, the wearer could get an early warning of possible AFib symptoms that their doctor can more thoroughly investigate. The smart watch transforms into a powerful health monitor by installing an app.

This was the subject of a paper published recently by our Digital Health team at the 2018 IEEE Engineering in Medicine and Biology (EMBS) International Conference on Biomedical and Health Informatics.

Authors Alireza Aliamiri and Yichen Shen (above, center) recognized that an issue with current consumer wearables is that bio-signals are subject to noise, user movements, and other issues affecting signal quality. They wondered if deep learning could be used to build a neural network to extract segments of the signal that were good enough quality to analyze, and a second network to identify AFib within those segments.

They trained two deep learning networks for this purpose and validated their method on nineteen subjects. The model achieved over 90% accuracy in detecting high quality samples within the data stream, and within those samples, over 98% accuracy in detecting AFib. They are planning to expand their studies to broaden the sample size and variety.

1. **Autonomous Mobility**

Samsung’s effort in autonomous mobility is about creating a safer, smarter, and more mobile future. We will accomplish this through innovations in machine vision, automated mobility, high-performance computing and connectivity. To support this effort, we are pursuing promising new investments and working with partners across a spectrum of technological areas.

From robots and drones to automated cars and delivery vehicles, the world of autonomous machines is just getting started.

1. **Artificial intelligence**

While there are many views on Artificial Intelligence (AI), ours is that AI will be a catalyst for enormous, positive change in the world. We see the future of AI as multi-modal, taking advantage of the current explosion of diverse data to create broad and beneficial tools for the global good.

AI and machine learning touch all parts of the Samsung ecosystem. Our passion is to push the state of the art to make the technology more accessible and more useful day-to-day. In his keynote speech at Web Summit 2018, Young Sohn, President and CSO of Samsung Electronics, outlined the huge opportunities that AI presents for global entrepreneurs.

1. **Data Infrastructure**

Our data infrastructure initiative is designing new data center architectures to enable the explosive growth in compute, network and storage capabilities required to make real-time decisions. Building on Samsung's robust semiconductor portfolio, our team is developing new reference designs and platforms comprising hardware, software, and interconnect technology, all built around open standards.

Working across business units and innovation areas, we are redefining the boundaries of data center technology to create new solutions for the growing data economy of the 21st century.

1. **Internet of things**

The Internet of Things (IoT) is changing the way we engage with the world. From smart cities to industrial manufacturing to our own homes, our devices are becoming more connected every day. These new connections can be used to dramatically improve lives. So, Samsung is leveraging the technology it knows well – mobile, semiconductors, security – to build intelligent platforms for IoT.

Around the world, forward-thinking cities are starting to embrace technological innovations that are leading to dramatic changes in housing, transportation, safety, security, and services.

1. **Security and privacy**

**Samsung Electronics Endorses Verimi’s Mission to Help Consumers Gain Greater Control of their Digital Identities**

Verimi, the European cross-industry identity and trusted platform welcomes Samsung Electronics Co., Ltd. as the latest backer of its secure, single sign-on and payment service. The investment from the world’s largest manufacturer of electronic devices demonstrates industry confidence in Verimi’s state-of-the-art security and data protection services and will enable further development of the Verimi ecosystem in Germany and expansion across Europe.

Verimi puts people in control of their personal data by equipping users with a convenient, safe, and secure identity solution that seamlessly integrates with users’ digital lives. Personal information and credentials are managed and controlled by the user, while providing companies and public institutions a European alternative to established sign-on and registration systems. Samsung Electronics supports Verimi’s position that personal data should be treated fairly, and users should always retain full control of their online identity.

“At a time when our online identities are both more important and more vulnerable than ever before, global leaders in business and policymaking must join together and design robust platforms that protect users’ most sensitive information,” says Young Sohn, Corporate President and Chief Strategy Officer (CSO) of Samsung Electronics and Chairman of the Board of HARMAN.  “Samsung is excited by the potential to leverage our technological expertise and resources to support Verimi’s mission to empower consumers across Europe and promote digital identity sovereignty.”

“The rising number of data and privacy breaches underscores the need for platforms that help protect consumers — and that grant them more control over their digital identities.” said Markus Pertlwieser, Chairman of Verimi’s shareholder committee and Chief Digital Officer, Deutsche Bank AG. “As the world’s largest manufacturer of electronic devices, the backing from Samsung is a huge win for Verimi and its mission to safeguard digital privacy for millions of consumers across Europe.”

Samsung Electronics joins 12 international companies supporting the Verimi ecosystem, including Allianz, Axel Springer, Bundesdruckerei, Core, Daimler, Deutsche Bahn, Deutsche Bank and Postbank, Deutsche Telekom, Giesecke+Devrient, Here Technologies, Lufthansa and Volkswagen Financial Services.

“Samsung’s support will bolster Verimi’s efforts to design a platform that adapts to each user’s unique set of needs, as well as demonstrate how companies can help foster improved, and accessible, digital security”, says Stefan Imme, Chief Digital Officer at Volkswagen Financial Services. He continues: “A cross-industry identity platform like Verimi with a simplified customer login also strengthens our digital ecosystems within the Volkswagen Group and generates real added value at a central interface for our customers.”