

Georges Kanaan

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<https://github.com/Ge0rges>

Education

BACHELOR OF COMPUTER SCIENCE FROM UNIVERSITY OF TORONTO

JULY 2021

Completed courses in AI, NLP, CS Theory, Game Design and Cognitive Science among others.

FRENCH BACCALAUREATE FROM INTERNATIONAL COLLEGE, BEIRUT

JUNE 2017

Graduated with distinction. Science track with a focus in Biology.

Professional Experience

NASA – GODDARD SPACE FLIGHT CENTER, RESEARCH INTERN

JUNE - AUGUST 2019

- Procured hardware for network emulation testing within a constrained budget.
- Developed and tested an emulation of a space network both at the hardware and software level to study the implementation of Delay/Disruption Tolerant Network protocols, such as the Bundle Protocol.
- Developed a specialized network management tool that allows for monitoring DTNs, furthering NASA's goal to be a reliable space network provider. This tool was tested on the purpose built DTN emulation hardware.
- Led the development of the network management tool. Including network overview, asynchronous management protocol interface, and visualizations for critical AMP data points. Resulted in an Academic Poster.

ANGHAMI, IOS DEVELOPER

JUNE - AUGUST 2017

- Independently integrated the music syncing protocol from *Airly*, an app I developed independently, as a revenue generating feature for the service.
- Contributed to ongoing development of the mobile app in collaboration with the iOS engineering team.

PRICewaterhouseCOOPERS, CYBER SECURITY INTERN

JULY 2016

- Contributed to writing client side technical specifications which were used in key decision-making discussions.
- Attended company workshops pertaining to their cyber security consulting division, furthering my skills in that area.
- Shadowed professional pen testers for a day, exposing myself to a professional security cracking environment.

SAILY, IOS DEVELOPER

MAY - JULY 2015

- Assumed responsibility for design, implementation and testing of critical parts of the Saily App in a small team.
- Independently built the Saily Apple Watch app from the ground up and managed its commercial release.

961 BEER, CONTRACTED IOS DEVELOPER

NOVEMBER - MAY 2014

- Contracted to develop and manage an iOS app to locate storefronts selling the company's product.
- Responsible for design, implementation, maintenance and release of the app.
- Implemented network features to ensure constant availability of the database in the app.

FOO_, IOS DEVELOPER

JUNE - JULY 2014

- Contributed to the development of ongoing projects for clients making use of various custom APIs.
- Built an in-house crash-reporting tool using custom APIs to transfer the crash logs to the company's database.
- Researched facial recognition technology demonstrating the OpenCV framework with the capability of recognizing facial features such as left eye, glasses, eyebrows.

Academic Research

UNIVERSITY OF TORONTO, MANNLAB, RESEARCH ASSISTANT TO DR. STEVE MANN

MAY 2019

- Developed a working Brain-Computer interface with Muse EEG, Arduino and Raspberry Pi to perform SSVEP.
- Captured the world's first image of vision and of multiple ayinographs, recording the eye's input as a camera using SSVEP, in line with the lab's sousveillance theme.
- Possibly implemented the first digital lock-in amplifier for iOS.

AMERICAN UNIVERSITY OF BEIRUT, RESEARCH ASSISTANT TO DR. AHMAD DHAINI

MAY - AUGUST 2018

- Rewrote and worked on adapting an existing optical coherence tomography scanning algorithm to different scanner formats.
- Used machine learning to identify valid corneal scan frames from the original video format.
- Used OpenCV to detect corneal haze contours and the corneal demarcation line.
- My contributions and findings directly resulted in a comparative study eligible for publication.

Publications

- Co-author with Steve Mann on an IEEE HealthCom'19 paper. *Accepted. To Appear.*
- Steve Mann [and 12 others, including Georges Kanaan] (2019) **Keynote – Eye Itself as a Camera: Sensors, Integrity, and Trust.** *In the 5th ACM Workshop on Wearable Systems and Applications (WearSys'19).*

Skills

- **Fluent in:** French, Arabic, English; Objective-C/C, Swift, Python.
- **Familiar with:** Spanish; PHP, Verilog, Bash, HTML, Markdown, CSS, C++, Java.
- **Worked with:** Windows, Linux, macOS, Git, Unity, OpenCV, iOS/macOS SDK (Xcode), Tensorflow, Spacy, VPS Deployment, Cydia Substrate, SciKit, PsychoPy, Muse EEG, Tkinter, DTN, ION, CORE, debuggers (gdb, lldb).

Projects & Achievements

APPLE - WWDC SCHOLARSHIP WINNER

JUNE 2015

- Won a scholarship awarded to 350 students. Attended labs and sessions held by Apple engineers including the UI Design Labs. Met Apple engineers and discussed future technologies and ongoing personal projects.

ALTCITY HACKATHON - RUNNER UP (MOVE-COUNTER APP)

MAY 2014

- Designed, developed and pitched a working app in 12 hours with the help of a designer. Other participants were aged between 18 and 30. The app I built, Move-Counter, sported the capability of recording a given move, storing it as a hash then recognizing the recorded move using the built-in accelerometer. The app was later redesigned and published.

PUBLISHED 11 APPS & TWEAKS

- Published 8 iOS Apps, 3 Tweaks (System modifications distributed through Cydia).
- 3 Tweaks received unprompted coverage from respectable review sources.
- *Bloard* (Tweak) received over a million downloads.
- *Airly* (App) improves on the Precision-Time-Protocol and allows precise music playback across devices; 100 downloads per week.

TELEVISION APPEARANCE

- Featured in a segment on young developers and entrepreneurs on a major television station in Beirut, Lebanon.

Personal Experience

- Lived in: Beirut, London, Toronto, Washington DC.
- Well traveled (over 20 countries), and multilingual, I bring a diverse and unique background to any team.
- Interests include: classical music, opera, history, running, skiing, biking, cognitive science, space, climate change.