Georges Kanaan

✉ georges@gkanaan.com • 🌐 https://gkanaan.com • ⌗ Ge0rges

ⓘ 0000-0002-5721-1138

Education

University of Washington   **Seattle, USA**
Dual-title PhD in Oceanography & Astrobiology   *Dec 2025*
Energetics, epigenetics, and memory as acclimation strategies of marine bacteria in subzero brines.
Supervised by Dr. Jody Deming.

University of Washington   **Seattle, USA**
Master of Oceanography   *Feb 2023*
Focus in Biological Oceanography. Supervised by Dr. Jody Deming. Co-advised by Dr. Jodi Young.

University of Toronto   **Toronto, CA**
Honours Bachelor of Computer & Cognitive Science   *Jun 2021*
Triple-major equivalent with a double major in Computer Science. Completed courses in AI, NLP, CS Theory, Game Design, and Philosophy among others.

International College   **Beirut, LB**
French Baccalaureate   *Jun 2017*
Graduated with distinction. Science track with a focus in Biology.

Employment

École Normale Supérieure, University of Tromsø, Campbell & Bowler Lab   **Paris, FR**
Post-doc   *Expected Feb 2026*
- Expected to begin a post-doctoral position in February 2026 with Dr. Karley Campbell and Dr. Chris Bowler at the biological institute of the École Normale Supérieure in Paris and the University of Tromsø.

University of Washington, School of Oceanography   **Seattle, USA**
Teaching Assistant, Ocean Sensors   *Jan–Mar 2025*
- Supervised 36 hours of practical lab time where students built sensors from the ground up, including programming microcontrollers, assembling breadboard circuits, calibration, and data collection and analysis.
- Graded a class of 40 students on topics related to ocean sensors, their function and engineering, and their usefulness in ocean monitoring.

University of Washington, School of Oceanography   **Seattle, USA**
Teaching Assistant, Hydrothermal Vents   *Jan–Mar 2024*
- Graded a class of 77 students on topics related to hydrothermal vents, including their function in the ocean, underlying mechanisms, history, and discovery.

University of Washington, School of Oceanography   **Seattle, USA**
Undergraduate Mentorship   *Apr 2023–Apr 2025*
- Mentored several undergraduate students. Teaching and mentoring on sterile technique, bacterial culturing, epifluorescence microscopy, DNA extractions, spectrophotometric measurements, experimental design and planning, project management and academic orientation.
- One undergraduate student completed his senior thesis as part of my mentoring efforts with Dr. Jody Deming and was subsequently accepted into a doctoral program.
- Taught field sampling techniques as well as DNA extractions and epifluorescence microscopy, to an undergraduate student.

University of Washington   **Seattle, USA**
Teaching Assistant, Marine Pollution   *Apr–Jun 2022*
- Responsible for grading a class of 50 students on a wide range of marine pollution topics such as plastics, noise, light, etc.
- Guest lecturer on ocean acidification and guided an in-class paper discussion.

NASA Johnson Space Center   **Houston, USA**
Extravehicular activity (EVA) Software Intern   *Jun–Aug 2020*
- Cancelled due to COVID-19.
- Accepted to work on EVA informatics, specifically on EVA Operations System, a suite of decision support tools and capabilities for the creation, distribution, and utilization of operationally relevant EVA workflows and data for spacewalks.

NASA Goddard Space Flight Center   **Greenbelt, USA**
Networking Intern   *Jun–Aug 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 (DTN) 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   **Beirut, LB**
iOS Developer Intern   *Jun–Aug 2017*
- Independently integrated the music syncing protocol from Airly, an app I developed, as a revenue generating feature for the service.
- Contributed to ongoing development of the mobile app in collaboration with the iOS engineering team.

PricewaterhouseCoopers   **London, UK**
Cyber Security Intern   *Jul 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, immersing myself in a professional cybersecurity environment.

Saily   **Beirut, LB**
iOS Developer Intern   *May–Jul 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.

961 Beer   **Beirut, LB**
Contracted iOS Developer   *Nov 2014–May 2015*
- 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_   **Beirut, LB**
iOS Developer Intern   *Jun–Jul 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.

Research Projects

Collaboration with Dr. Eric Pelletier   **Génoscope**
Sea-ice Methods Optimization   *Dec 2024–Ongoing*
- Helped design method benchmarks for ice-melting methods for use aboard Tara Polar Station.
- Currently optimizing DNA extraction methods for sea-ice samples.
- Currently optimizing sea-ice sampling protocols for genomics for use aboard the Tara Polar Station.

Collaboration with Dr. Marc Neveu   **NASA**
Ice Plume Organics   *Apr 2024–Ongoing*
- Part of an astrobiology research rotation at Goddard Space Flight Center.
- Cultured a model sea-ice bacterium and obtained extracellular polysaccharides from it.
- Injected the extracellular polysaccharides into a vacuum simulating Enceladus plume conditions.
- Assessed effect of vacuum on polysaccharide structure and detectability within the context of the search for life.

Collaboration with Dr. Ardith Bravenec, Caitling lab — University of Washington
Freezing Kinetics — *Jun 2023–Ongoing*
- Assessment of the effect of extracellular polysaccharides on freezing kinetics of water ice.
- Cultured and tested different model psychrophilic bacteria.
- Identified impact on rates and thresholds of vitrification and freezing based on the presence of extracellular polysaccharides using a differential scanning calorimeter.

Dissertation chapters with Dr. Jody W. Deming — University of Washington
DNA Methylation in Psychrophiles — *Feb 2023–Dec 2025*
- Planned and executed a sea-ice field campaign to collect sackhole brines from different sea-ice horizons.
- Developed a novel stepped-sackhole approach for brine collection from distinct sea-ice horizons.
- Sequenced environmental samples using Nanopore to obtain DNA methylation data.
- Designed an experiment to understand DNA methylation's role in a model sea-ice bacterium's stress response.
- Established a chemostat and growth system with continuous optical density and temperature measurements.

Dissertation chapter with Dr. Jody W. Deming and Dr. Jodi Young — University of Washington
Bacterial Energetics — *Sep 2022–Feb 2023*
- Developed a model to understand the required energetic input to support the bacterial community in subzero brine.
- Conducted a sensitivity analysis of the different inputs to characterize the accuracy of the model output.
- Manuscript published in a special volume of Frontiers in Microbiology 2023.
- Abstract accepted for a poster presented at Microenergy 2022.
- Participated in a workshop to co-author a synthesis paper on the larger cryopeg research project.

Collaboration with Dr. Laura Moore, Bundy Lab — University of Washington
Sea-ice Siderophores — *Feb 2022–Ongoing*
- Quantification and identification of siderophores produced by a model sea-ice bacterium.
- Assessment of the role siderophores play in iron cycling in the Arctic and within sea-ice.

Research with Dr. Jody W. Deming — University of Washington
Arctic Oil Bioremediation — *Sep 2021–Jan 2023*
- Proposed and received a grant to investigate novel bioemulsifiers produced by arctic sea-ice bacteria.
- Developed a plan to characterize the commercial viability of an identified bioemulsifier based on EPA requirements.
- Cultured multiple species of Arctic bacteria to survey their emulsification production capacity.
- Confirmed emulsification capacity on kerosene, then tested on crude oil.
- Mentored an undergraduate who continued work on this project for two months.

Research assistant to Dr. Miriam Diamond — University of Toronto
Machine Learning for Dark Matter Search in SuperCDMS — *May–Dec 2020*
- Grant from Arthur McDonald Canadian Astroparticle Physics Research Institute.
- Acquired a knowledge-base in particle physics in order to apply machine learning to physics problems.
- Researched and engineered both supervised and unsupervised machine-learning solutions to discriminate between single and multiple recoil events in the particle detector using HPC techniques on ComputeCanada supercomputers.
- Worked closely with physicists to understand the data and produce the adequate feature set through feature engineering, along with my fellow research assistant.

Independent — University of Toronto
Neural Plasticity & Unsupervised Learning — *Jul 2019–May 2020*
- Recruited and led a team of three undergraduate students.
- Researched and developed novel ideas to model neural plasticity in neural networks.
- Invited to present our research in a second-year cognitive science class at the University of Toronto.
- Published a preprint in a public computer science archive.

Research assistant to Dr. Steve Mann — University of Toronto
Brain Computer Interfaces — *May 2019–Apr 2020*
- Developed a working Brain-Computer interface with Muse EEG, Arduino and Raspberry Pi to perform Steady State Visually Evoked Potentials experiments.
- 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. Implemented possibly the first digital lock-in amplifier on iOS.
- Researched and developed a new way to treat prosopagnosia using a computer vision and mobile applications.

Research assistant to Dr. Ahamad Dhaini — American University of Beirut
Computer Aided Diagnostics — *May–Aug 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.

Field Work

microSHIFT 2025, Central Arctic, Arctic Ocean   *May 2025–34 days*
- Participated in the microSHIFT 2025 expedition, led by Dr. Karley Campbell, as a scientist aboard R/V *Kronprins Haakon*.
- Planned and executed my own field campaign to optimize genomic methods for sea ice and to broadly characterize sea-ice and related microhabitats using metatranscriptomics.
- Led the genomics sampling for the microSHIFT project on behalf of Dr. Karley Campbell.

SCOPE 2025, Hokkaido, Japan   *Jan 2025–12 days*
- Participated in the SCOPE 2025 international expedition, led by Dr. Daiki Nomura, as an invited researcher.
- Successfully planned and executed a field campaign for the collection of frost flowers from Lake Akana and sea-ice samples from Saroma-ko Lagoon.

BREATHE 2023, Yermack Plateau, Arctic Ocean   *May 2023–19 days*
- Participated in the BREATHE 2023 expedition and field school, led by Dr. Karley Campbell, as an invited researcher aboard R/V Kronprins Haakon.
- Successfully planned and executed my own field campaign for the collection of sea ice brine for genomic work.

VISIONS'22, North Eastern Pacific Ocean   *Aug 2022–10 days*
- Funded to participate on the first leg of the cruise, led by Dr. Deb Kelley, aboard the R/V *Thomas G. Thompson*.
- Led a 6-hour ROPOS dive to sample diffuse flow hydrothermal vent fluid at Axial seamount for Dr. Rika Anderson.

Biogeochemical Exchanges at Sea Ice Interfaces, Canadian Arctic   *May 2022–14 days*
- Funded to attend the BEPSII summer field school in Cambridge Bay, Canada, in the Arctic.
- Attended over 30 hours of lecture on sea-ice physics, chemistry and biology.
- Learned fundamental field techniques for Arctic sampling: snow characterization, ice coring, sackhole brine sampling, seawater sampling, and photosynthetic active radiation measurements.

Publications

2025: Kanaan, G., Page-Roth, J., & Deming, J.W. *Drivers of bacterial community composition in an ice-covered geothermally heated lake*. (in prep).

2025: Deming, J.W., Cooper, Z.S., Eicken, H., Harrison, K., Iwahana, G., Kanaan, G., Rapp, J.Z., & Young, J.N. *Uncovering the mysteries of cryopegs: Geo-microbial evolution in subzero brines isolated geophysically within permafrost. Proceedings of the National Academy of Sciences*. (in prep).

2025: Cooper, Z.S., Carpenter, S.D., Kanaan, G., & Deming, J.W. *Cryomarinobacter cryopegasus, gen. nov., sp. nov, isolated from Arctic subzero cryopeg brine*. (in prep).

2025: Kanaan, G., Yang, Z., & Neveu, M. *Detectability of extracellular compounds from icy moon analogues under Enceladus plume conditions. Astrobiology* (submitted, in review).

2025: Kanaan, G., & Deming, J.W. *Multiple roles of DNA methylation in sea-ice bacterial communities and associated viruses. The ISME Journal*.

2023: Kanaan, G., Hoehler, T.M., Iwahana, G., & Deming, J.W. *Modeled energetics of bacterial communities in ancient subzero brines. Frontiers in Microbiology*.

2021: Kanaan, G., Zheng, K.W., & Fenaux, L. *A novel approach to lifelong learning: The plastic support structure. arXiv* 2106.06298.

2020: Mann, S., Pan, Z., Tao, Y., Gao, A., Tao, X., Garcia, D.E., Shi, D., & Kanaan, G. *Face Recognition and Rehabilitation: A Wearable Assistive and Training System for Prosopagnosia*. In *2020 IEEE In-*

ternational Conference on Systems, Man and Cybernetics (SMC'20), Toronto, ON, Canada, pp. 731-737. doi:10.1109/SMC42975.2020.9283058.

2019: Mann, S., Lam, D., Mathewson, K.E., Pierce, C., Stairs, J., Hernandez, J., Kanaan, G., Piette, L., Khokhar, H., & Mann, C. *The Human Eye as a Camera*. In *IEEE International Conference on E-health Networking, Application & Services (HealthCom'19)*, Bogota, Colombia, pp. 1-8. doi:10.1109/HealthCom46333.2019.9009592.

2019: Mann, S., Defaz, D., Pierce, C., Lam, D., Stairs, J., Hernandez, J., Li, Q., Xiang, Y.X., Kanaan, G., Chen, H., Aylward, G., Jorritsma, M., & Mann, C. *Keynote – Eye Itself as a Camera: Sensors, Integrity, and Trust*. In *5th ACM Workshop on Wearable Systems and Applications (WearSys'19)*, Association for Computing Machinery, New York, NY, USA, 1–2. `https://doi.org/10.1145/3325424.3330210`

Presentations & Posters

2025: Kanaan, G. & Deming, J.W. *Bacterial use of DNA methylation to acclimate to sea ice*. Poster, Gordon Research Conference on Polar Marine Sciences, March 9–14, Lucca (Barga), Italy.

2025: Kanaan, G. & Deming, J.W. *A sea-ice perspective on bacterial DNA methylation*. Talk, Gordon Research Seminar on Polar Marine Sciences, Lucca, Italy.

2024: Kanaan, G. & Deming, J.W. *Bacterial use of DNA methylation in sea ice*. Invited talk, Institut Biologique de l'École Normale Supérieure, Paris, France.

2025: Kanaan, G. & Deming, J.W. *Extremophile DNA methylation and epigenetic memory*. Special session: Pushing the frontiers of extreme microbiology. Poster, ISME19, 19th International Conference on Microbial Ecology, August 18–23, Cape Town, South Africa.

2025: Veseli, I., Schechter, M.S., Henoch, A., Trigodet, F., Sever, M., Kiefl, E., Klein, M.L., Kanaan, G., Salazar, V.W., Fink, I., Buck, M., Telatin, A., Watson, A.R., Deveaud, E., Utter, D.R., Fernandez-Guerra, A., Youngblut, N., Speth, D.R., Willis, A.D., Bartelme, R., Kananen, K., Quiles, C., Bradley, P.H., Miller, S.E., & Eren, A.M. *Making big data accessible to microbiologists: lessons from developing a versatile software ecosystem for multi-'omics analysis*. Talk, ISME19, 19th International Conference on Microbial Ecology, August 18–23, Cape Town, South Africa.

2024: Bravenec, A., Junge, K., Firth, E., Kanaan, G., & Catling, D.C. *Psychrophiles and the thermodynamic and kinetic aspects of brines: implications for icy worlds*. Poster, Astrobiology Science Conference, May 5–10, Providence, Rhode Island.

2023: Campbell, K., McKay, R., Keonig, Z., Osanen, J., Laber, C., Kanaan, G., Sadler, M., Van Niekerk, J., Brusselman, A., & Itkin, P. *BREATHE field school goes with the floe: Insights from an early-career training program*. Poster, The Nansen Legacy Symposium, November 7–9, Tromsø, Norway.

2023: Kanaan, G. & Deming, J.W. *Searching for memory: methylation in sea-ice bacteria*. Poster, Gordon Research Conference on Polar Marine Sciences, March 5–10, Ventura, California.

2023: Kanaan, G. & Deming, J.W. *The potential for microbial memory in sea ice*. Talk, Gordon Research Seminar on Polar Marine Sciences, March 5–10, Ventura, California.

2022: Kanaan, G., Hoehler, T.M., & Deming, J.W. *Understanding the microbial energetics of cold, salty, and isolated systems: Analogs for other icy worlds*. Poster, 4th International Workshop on Microbial Life under Extreme Energy Limitation, September 5–9, Sandbjerg Manor, Denmark.

Workshops

EBAME 8 Workshop on Computational Microbial Ecogenomics   **Brest, FR**
Learned various bioinformatic techniques from Dr. Loïs Maignien, Dr. Tom Delmont, et al.   Oct 2024

4th International Workshop on Microbial life under extreme energy limitation Sønderborg, DK
Presented calculations of the minimum metabolic requirements in isolated permafrost communities Sep 2022

Awards, Grants & Scholarships

Dissertation Completion Award 6,000 USD
Washington NASA Space Grant Consortium *Fall 2025*
Awarded for academic excellence in support of dissertation writing.

Beatrice Crosby Booth Endowed Fellowship 9,000 USD
University of Washington, School of Oceanography *Summer 2025*
Awarded for academic achievement.

Egtvedt Endowed Scholarship in Oceanography 1,000 USD
University of Washington, School of Oceanography *Summer 2025*
Awarded for academic achievement.

Theodore H. and Marie M. Sarchin Endowed Fellowship in Oceanography 9,000 USD
University of Washington, School of Oceanography *Fall 2025*
Awarded for academic achievement.

Scholar Mobility Fund 2,400 EUR
ISME *May 2025*
Awarded to support participation in the microSHIFT 2025 expedition

Morse Scholar Exchange Program 2,000 USD
Friday Harbor Labs *Jan 2025*
Awarded to fund a proposal sampling frost flowers at Lake Akan, Japan

Hall Conservation Genetics Award 10,000 USD
University of Washington *Apr 2023*
Awarded to fund a proposal I developed on DNA methylation of sea-ice bacteria

Washington Space Grant 4,000 USD
Washington NASA Space Grant Consortium *Sep 2022*
Awarded to fund a NASA Science Mission Directorate project, modeling bacterial energetics in the extreme environment of subzero brine

Leo Cup Award 40,000 USD
University of Washington, School of Oceanography *Sep 2021*
Awarded to the best academic-year proposal for oceanographic research tackling marine pollution

Cross-Disciplinary Internship 10,000 USD
Arthur B. McDonald Canadian Astroparticle Physics Research Institute *May 2020*
One semester of support for interdisciplinary research in particle physics

TPE Excellence Award
International College *Jun 2017*
Awarded to the student with the most original and best performing presentation on the national exam

WWDC Scholarship
Apple *Jun 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

Hackathon–Runner Up (Move-Counter App)
AltCity *May 2014*
Designed, developed and pitched a working app in 12 hours with the help of a designer. Youngest participant. The app I built, Move-Counter, sported the capability of recording a given move, storing it as a hash then recognizing it.

Skills & Certificates

Medical certifications: Medically certified for a Winfly in Antarctica in 2023 to Palmer station for 6 months,

and for work on the Norwegian icebreakers in the high Arctic beyond the primary search and rescue zone.

Lab skills: Sterile technique, culturing, isolation, kerosene emulsification index assay, phenol sulfuric-acid assay, centrifugation, epifluorescence microscopy, nucleic acid extraction, spectrophotometry, differential scanning calorimetry, nanopore sequencing, media elaboration, extracellular polysaccharide isolation, GCMS analysis, chemostat operation

Bioinformatics Skills: Algorithm development, basecalling, alignments, mapping, manual binning, automatic binning, anvio, functional gene analysis, epigenetic analysis, machine learning

Field skills: Ice coring, sackhole brine sampling, PAR measurement, snow pits, seawater sampling, ROV operations, CTD operations, safety protocols.

Certificates: NAUI open water diving, NAUI drysuit diving, Norwegian polar institute survival suit use, Norwegian polar institute polar bear guard.

Programming languages: Objective-C/C, Swift, Python, PHP, Verilog, Bash, HTML, Markdown, CSS, C++, Java, Julia.

Computer science skills: Windows, Linux/Unix, macOS, Git, Unity, OpenCV, iOS/macOS SDK (Xcode), Spacy, VPS Deployment, Cydia Substrate, SciKit, Muse EEG, Tkinter, DTN, CORE, debuggers (gdb, lldb), PyTorch, HPC, Polars.

Language skills: Native speaker of French and English. Proficient in Arabic.

Volunteering

APECS
Project Group Co-Lead Podcast _____ *Sep 2024–Sep 2025*
- Organized and led the Polar Times science communication podcast for the Association of Polar Early Career Scientists.
- Oversaw a team of over 15 people divided into teams which produced different month-long topical deep dives.
- Supervised writing, editing, research, interviewing, marketing, recording, and publication.

APECS
Project Group Lead Mentorship Award _____ *Sep 2024–Sep 2025*
- Organized and led the international mentorship award project group for the Association of Polar Early Career Scientists.

Extremophiles
Journal Reviewer _____ *2024*
- Invited to review a subsequently published paper in the Extremophiles journal.

Graduate Climate Conference
Committee Member _____ *Sep 2023–Nov 2024*
- Member of the recordings and evaluation committee.
- Reviewed abstracts submitted for conference participation as an expert on polar regions, oceanography, and microbiology.

Pacific Science Center
Polar Science Day Volunteer _____ *Dec 2022, Mar 2024*
- Interpret and teach about Arctic Ocean salinity using a salinity taste test game.

Seattle Aquarium
Marine Science Interpreter _____ *May 2022–Ongoing*
- Interpret and animate various exhibits on local fauna and flora to thousands of guests.

Resilient Hearts Animal Sanctuary
Temporary Dog Foster _____ *May 2022–Ongoing*
- Fostered dogs for the local animal shelter.

UW Graduate Application Mentorship Program
Mentor _____ *Oct–Dec 2021*
- Guided two prospective international undergraduate students through the graduate student application process.

UW Academic & Recreational Graduate Oceanographers
Officer *Sep 2021–Ongoing*
- Social events coordinator for the School of Oceanography's graduate student organization.
- Planned and executed many social events for the graduate student body including park hangouts, barbecues, movie nights, and game nights. With my cohort, organized monthly social gatherings and a yearly graduate student retreat at Friday Harbor Labs on San Juan Island, Puget Sound, WA.

University of Washington CubeSat Team
Member *Sep 2021–May 2022*
- Worked on satellite communication infrastructure.

University of Washington Indoor Farming Project
Member *Sep 2021–May 2022*
- Club focused on hydroponics and sustainable farming. Produces food that is donated weekly to the university food bank.

University of Toronto Aerospace Team
Member *Sep 2019–May 2020*
- Developed a biological mission concept for the next SmallSat mission involving the study of herpes.
- Reached out to launch companies as well as agencies coordinating biological experiments on ISS to study the feasibility of conducting an experiment in space.

NeuroTech UofT
Director of Cortical Apps *Sep 2018–May 2019*
- Responsible for the coordination of the various teams building applications making use of brain computer interfaces.

Personal Projects

Server Hosting: DNS, VPN, & More *Nov 2012–Ongoing*
- Maintained a public facing ubuntu server hosting a myriad of services with 99.9% uptime.
- Hosted and configured a secure VPN based on OpenVPN, and later WireGuard.
- Hosted and configured a Minecraft server complete with automatic backups.
- Hosted and configured a personal DNS service using unbound, complete with ad-blocking capabilities using PiHole.
- Hosted and configured a private Siri proxy service used to get Siri on jailbroken iPhone 4.
- Hosted, configured and made my personal website.

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.

Personal Experience

Lived in: Beirut, London, Toronto, Washington DC, Strasbourg, Seattle.

Well traveled (over 20 countries), and multilingual, I bring a diverse and unique background to any team.

Interests: music, history, running, skiing, biking, computational neuroscience, space, trains, sailing, chess, photography, backpacking, .

Self-taught: I am motivated by curiosity and my passion for science

Press Appearances

Article in the University of Washington's School of Oceanography about the BREATHE cruise in 2022.

Article in the University of Washington's School of Oceanography about the Leo Cup Award in 2021.

Article in the University of Toronto news, and national Lebanese news outlet l'Orient le Jour about my NASA internship in 2019.

Featured in a segment on young developers and entrepreneurs on a national television station in Lebanon.