

# Erik Helal

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## Education

**B.Eng - Chemical Engineering, Computer Science**

**Sept 2016 - May 2020**

*McGill University, Montreal, QC*

- Developed an understanding of Object-Oriented Programming (OOP) patterns and anti-patterns in an academic setting. Learned Java, Python, and C. Background in applied machine learning: worked on projects involving linear regression, natural language processing (NLP), support vector machines (SVM), deep learning in the form of convolutional neural networks and recurrent neural networks (CNN and RNN), random forests etc. Used libraries such as Scikit-learn and PyTorch for these projects.
- Richard Herzer, Dr. P.K. Ganguli Memorial, and John Howard Ambrose Scholarships recipient: awarded for academic achievement and community involvement.
- CGPA: 3.81/4.00 – Graduated with distinction.

**Tech stack at a glance:** OOP, Java, JUnit 5, Python, NumPy, Scikit-learn, PyTorch, C, MATLAB

## Relevant Professional Experience

**Flighthub: Full Stack Software Developer**

**June 2019 – Present**

I work on the web apps at Flighthub.com and its American affiliate Justfly.com, online travel agencies (OTA). It is a tech company with only about 15 developers, so my work is very diverse. In addition to regularly using PHP (in the legacy MVC “Solar” framework), MySQL, and JavaScript/jQuery (+ HTML and CSS), I also work on projects involving technologies such as Redis, Elasticsearch, Kafka, Docker, Kubernetes, Clickhouse and languages like Kotlin (a Java derivative). I have used these technologies for purposes such as building high-throughput data pipelines. I write and maintain unit tests using the PHPUnit framework and concepts such as mocking and stubbing. I occasionally use ReactJS when developing on the mobile sites.

Development is done primarily using a Vagrant Virtual Machine (VM), and we routinely SSH into our Linux-based (Debian/Ubuntu) staging and production servers for various reasons. Our workflow includes the use of Git, Github, Travis CI, Trello, and Slack for the purposes of continuous integration in an Agile work environment. We use NewRelic’s APM service to monitor our deployments and the state of the app. I also have experience using Atlassian products such as Jira and Confluence.

The business units I work on the most are flight searching and flight booking. As such, I have worked extensively with communicating with our business partners’ REST and SOAP APIs, as well as building/upgrading/re-architecting our internal structures that handle these requests/responses. In addition to programming, this work involves analyzing debug logs, understanding API documentation, writing investigative reports to present to managers, and managing email chains and phone calls with our business partners’ technical leads.

The tech stack is a mix of legacy and newer technologies, and I work with both the legacy codebase as well as brand new codebases.

**Tech stack at a glance:** OOP architecture, PHP 7.2 (with static typing as much as possible), Solar (MVC framework), PHPUnit, Composer, MySQL, Clickhouse, Kafka, Redis, JavaScript, jQuery, ReactJS, HTML, CSS, Elasticsearch, Docker, Kubernetes, Kotlin (Java), Vagrant VM, SSH, Linux (Debian/Ubuntu), Git, Github, Travis CI, Trello, Slack, NewRelic, Jira, Confluence, REST API, SOAP (XML) API, JetBrains (PhpStorm, IntelliJ IDEA, DataGrip)

## Community Engagement and Leadership

**Vice President of Finance:** *National Organization for Business and Engineering (NOBE) – McGill Chapter*

**Sept 2017 - Aug 2018**

- Prepared budget for business-themed networking events, workshops, and case competitions catered to engineering students. Implemented control procedures to ensure the balance of the budget. Recorded cash receipts and disbursements.
- Presented the club’s activities and budget to the governing student body for funding purposes.

**Director of Outgoing Global Volunteers:** *AIESEC McGill*

**Sept 2016 - Aug 2017**

- Consulted university students to find volunteering opportunities in international startups or NGO’s.

- Fostered strategic relationships with AIESEC entities abroad to facilitate student exchanges. Coordinated the logistics of student exchanges.
- Marketed AIESEC programs to students on campus through strategic outreach and hosting information sessions.
- Helped manage a team of 16 members, ultimately coordinating over 50 exchanges.

**Organizer:** *2016 Marianopolis College Ski Trip*

**Aug 2015 - Jan 2016**

- Organized the 2016 Marianopolis College ski trip in conjunction with Ski Evolution Inc..
- Marketed the trip through social media, gathering 122 participants; handled over \$40000.

## Languages

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- **English + French:** Native speaker
- **Japanese:** Officially professionally proficient. Passed proficiency exam from government of Japan, second highest level: JLPT N2.