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CURRICULUM VITAE

I'm a **software professional** with a strong background in **computer science** and more than **25 years experience** delivering software. I am particularly effective at (and thoroughly enjoy) **solving problems, architecting new systems, maintaining and enhancing legacy systems, leading development teams, integrating with the open source ecosystem** and last but not least **crafting beautiful code**.

I am looking to contribute to organizations that **embrace the values of the Internet**: cooperation, openness, continuous improvement, community involvement. My **preferred application domains** include: Music and audio technologies, Arts and culture, Social development and civic engagement, Education.

Technically, I am familiar with a wide array of software technologies but I am partial to the **Linux platform**, running **multi-tiered, API-driven, component-based** applications that are delivered through the **Web**. My main interests revolve around **information modelling and processing**, including content and knowledge management, collaborative work, information indexing and retrieval, computational linguistics. My teams and I have **contributed code and documentation** to all the open source systems that we've used.

WORK EXPERIENCE

2022 – Present: Solution architect, [Quartech](#)

I manage the technical portfolio for the Government of British Columbia, Ministry of Post Secondary Education and Future Skills. This includes building and maintaining the [WorkBC.ca](#) site and its ecosystem of microsites and API services.

My role as solution architect involves the following:

- Manage the technical team, which typically consists of a mix of employees and contractors with heterogeneous skillsets
- Manage the technical backlog by analyzing and estimating tickets, planning the implementation with technical team members, reviewing the implementation, compiling release notes
- Produce solution designs and architecture documentation
- Analyze and measure application performance and design impactful enhancements
- Fill in software development duties where needed
- Coordinate product design and specification activities with the product owner
- Coordinate project management activities with the project manager
- Coordinate systems engineering activities with the Ministry's infrastructure team
- Provide longer-term strategic recommendations at the technical level
- Train business users on the delivered solution and prepare training material

All our work is open sourced, as mandated by the Government of British Columbia. Some representative projects on GitHub:

- [WorkBC.ca](#), a massive Drupal 9 site running on AWS / RDS / PostgreSQL
- [JobBoard](#), a .NET API service and Angular front-end that aggregates and indexes province-wide job opportunities
- [Single Source of Truth API](#), a read-only data service for government statistical data

2020 – 2022: Engineering contractor

I worked on several short- and medium-term contracts over the last 2 years, to satisfy my interests and utilize my skills where I can provide value:

Drupal architect, [Quartech](#)

Working on a project for the Government of British Columbia, Canada.

Technologies: Drupal, PHP, PostgreSQL, AWS, Docker, git

Engineering manager, [Internet Archive](#)

Internet Archive is one of the cornerstones of the modern Internet. I was thrilled to be offered a position to join the [Wayback Machine](#) team as Engineering Manager. My role in the Wayback Machine team involved the following:

- Align the team's technical activities with the product goals
- Help the team plan and execute on technical projects to reach production
- Participate in creating, maintaining and enhancing the team's software systems across the full stack
- Assess, document and enhance the team's engineering practices
- Increase collaboration and knowledge transfer between team members and with other Internet Archive teams

Technologies: Python, React, Nomad, Kafka, Docker, git

Technical advisor, [Labyrinth Online](#)

Helping this online music course organization setup their technical infrastructure.

Technologies: Node.js, AWS, Wordpress, Airtable, git

Web Audio developer, [Newzik](#)

Delivering a Web Audio and MIDI multitrack player for this company's [online music collaboration platform](#).

Technologies: React, Web Audio, MIDI, git

2011 – 2020: CTO, [Meedan](#)

I was initially hired by this US non-profit as a software contractor, but was soon offered the larger position of directing their engineering effort. My job involved the following:

- Manage the software development process with a geographically distributed team of ~10 members
- Plan system features with the product team, in terms of feasibility, prototyping, effort/time estimation, scheduling, ticketing
- Manage the implementation of system features with the software team, including selection of appropriate components, planning implementation strategy, code review, software testing, troubleshooting, and occasional coding
- Select and manage software development tools (bug tracking, version control, deployment tools, etc.)
- Manage system operations (hosting, performance, monitoring, backup, etc.)
- Build an [open source community](#) of developers around Meedan technologies

Over the course of this work, I managed the design and delivery of several exciting applications, including:

- [Check](#), a microservice-based collaborative social media verification application. This application is in active use by digital journalism newsrooms all over the world, including two [award-winning teams](#) at the 2017 Online Journalism Awards.
- **Bridge** (retired), a collaborative social media translation application – deployed to multiple partners including [National Geographic](#).

Technologies: React, Ruby on Rails, Sidekiq, Python, Node.js, Drupal, PHP, Apache Storm, Facebook API, Twitter API, Slack API, WhatsApp API, GraphQL, PostgreSQL, Elasticsearch, MySQL, Redis, AWS, Docker, GitHub CI, Travis CI, Jenkins CI, git

WORK EXPERIENCE (cont'd)

2009 – 2014: Drupal freelancer

I moved from Cairo, Egypt to Vancouver, Canada in 2008, and restarted my software career there.

Through my freelancing site [There's a module for that!](#), I made myself available for Drupal contracts. Thanks to the technical articles on the site, as well as the [dozen or so modules that I've contributed to Drupal.org](#), my online reputation rose to the point where I received weekly quote requests on this site. My most successful contribution to Drupal.org is the module [Views Bulk Operations](#), which ended up being included in Drupal's core. I also adapted [Dan Bricklin's SocialCalc JavaScript spreadsheet engine](#) for inclusion [within the Drupal ecosystem](#).

2004 – 2008: Technical director and co-founder, OpenCraft, Cairo, Egypt

OpenCraft was a 25-employee open source services company which I co-founded with 2 partners. We were among the first adopters of open source technologies in the region, and decided to build a business model around open source services and consultancy. We focused on content management systems and intranets using Drupal. 4 years later, we had achieved a moderate level of success, with a client list including Intel, Google, Microsoft Research, Reuters and [IDRC](#).

My responsibilities at OpenCraft included:

- Selecting the technologies needed to deliver projects
- Participating in project delivery as software architect
- Solving hard problems that occurred during project design and implementation
- Designing and co-managing the software process and supporting tools
- Designing and co-managing the company's IT infrastructure
- Managing community contribution activities
- Designing and overseeing the technical recruitment process
- Creating and co-managing community outreach activities

WORK EXPERIENCE (cont'd)

1994 – 2001: Engineering lead, [ITWorx](#), Cairo, Egypt

ITWorx is a major Egyptian software services company. I was part of the initial 5-member team who started the firm, which today counts 700+ employees with offices in the US and several countries of the Middle East (Egypt, UAE and Saudi Arabia).

My responsibilities at ITWorx included:

- Leading the technical delivery of many projects, including managing engineering teams
- Researching and prototyping new ideas
- Creating internal tools and libraries for company-wide reusability
- Participating in software process improvement activities

Representative projects:

- Maintaining and enhancing **Corel MOTION 3D**, a 3D modeller bundled with Corel DRAW, as commissioned by Corel Corp.
- Creating plugins for **Adobe Photoshop**, as commissioned by Adobe Systems Inc. During the course of this project, I wrote a low-level C++ library that was reused by software teams at Adobe for many years.

Technologies: C++, Win32 API, COM/OLE, Java, ASP.NET

EDUCATION

1995 – 1998: M.Sc. Computer Science, [Université de Montréal](#), Canada

- Recipient of [Bourse de la Francophonie](#) scholarship whereby the full program tuition was generously provided by the Canadian International Development Agency.
- Studied at the [computer graphics lab](#) under the supervision of [Prof. Pierre Poulin](#).
- Master's thesis: [Multi-level volumetric textures for the rendering of complex scenes](#).
- Graduated with an A average GPA.

1989 – 1994: B.Sc. Computer Science, [American University in Cairo](#), Egypt

- Minor in Mathematics and Physics.
- Graduated summa cum laude.

PUBLICATIONS

- Ratib, K. “Texture volumique multi-échelle pour l’affichage de scènes complexes.” M.Sc. Thesis, Université de Montréal, December 1997.
- Poulin P., Ratib K., Jacques M. “Sketching Shadows and Highlights to Position Lights.” Proc. Computer Graphics International 97, June 1997.
- Ratib, K., Aïmeur, E. “Vers l’intégration Enseignement Intelligemment Assisté par ordinateur / Interaction Humain-Machine.” Technical Report #1028, Département d’Informatique et de Recherche Opérationnelle, Université de Montréal, April 1996.

GENERAL INFORMATION

- French / Canadian citizen
- Based in Vancouver, British Columbia, Canada (UTC-8)
- Languages: French, English, Arabic, Portuguese