Matthew Laird

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Summary of Qualifications

- 25 years of software development and IT systems management experience
- Successfully lead software projects from requirements gathering, design, scoping, to delivery
- Built and led high performing software teams
- Participated in a leadership role of an international standards body

Technical Skills:

Programming languages:	C#, Python, Perl, Java, C, C++, Javascript, scripting (bash, awk, sed)
Technologies/Standards:	REST, JSON, XML, SQL, OpenAPI, Machine Learning
Services/Platforms:	AWS, GCP, PostgreSQL, Snowflake, Spark, Casandra, Kakfa, Argo, Ansible, Terraform, Kubernetes
Software/Frameworks:	.NET, Git, Django, Spring Boot, Catalyst, OpenStack, D3

Professional Experience

Capgemini Engineering (Vancouver, Canada) **May 2024 – present**

Lead Product Software Engineer (Senior Manager)

- Continuation of Unity-Walmart partnership for in-game immersive commerce
- Led project design and scoping for backend/cloud components of new client projects
- Provided mentorship as a member of the studio technical leadership

Unity Technologies (Vancouver/Port Coquitlam, Canada)

Staff Backend Developer	Oct 2023 – Apr 2024
Lead Developer, Cloud (Retail and Industrial Solutions)	Oct 2022 – Oct 2023
Software Development Manager	Jul 2021 – Sept 2022
Lead Software Developer	May 2020 – July 2021

Highlighted project

- Technical lead and architect for $8M USD Unity-Walmart partnership bringing immersive commerce to Unity games
- Engaged with client on requirements, high level architect of system
- Coordinated with team leads and project managers on scope, budgeting, and planning
- Oversaw backend, web dashboard, devops and QA teams
- Primary technical contact with client

Applies to all roles at Unity

- Technical leadership for new and existing projects, created designs and architectures
- Oversaw software developers, from career development to mediating interpersonal issues
- Conducted interviews for all levels of positions from junior software developers to senior managers
- Liaised with clients over technical requirement and project progress
- Coordinated with other teams and divisions in the company to align requirements & project timelines
- Assumed a leadership role in numerous software projects
- Authoring technical design documents and briefs for upper management
- Held leadership role in establishing a new business unit
- Built a high performing team from the ground up
- Coded, yes, I still remember how to do that

Development environment: C#/.NET, GCP, Java, Spring Boot, NodeJS, Python, Argo, Snowflke, Kubernetes

Finger Food Advanced Technology Group (Port Coquitlam, Canada) **Jan 2019 – April 2020**
Senior Software Developer

- Provided leadership on projects, mentored junior team members, led code reviews, scrum planning
- Quickly learned the tech stack and became the project's domain expert
- Liaised with client and partners about project design and requirements
- Conducted phone screenings and in person interviews for new recruits of all levels

Development environment: Java, Spring Boot, PostgreSQL, Ansible, AWS (EC2), Hashicorp Vault

European Bioinformatics Institute (Cambridge, UK) **Oct 2015 – Oct 2018**
Senior Software Developer, Ensembl

- Maintain and enhance the Ensembl API and REST service code bases
- Participated in Global Alliance for Genomic Health working groups, including a leadership roll of the Reference Sequence Retrieval API (refget) standard workgroup
- Mentored a Google Summer of Code student
- Introduced automated deployment to legacy systems using Ansible on OpenStack, reducing repetitive tasks prone to human error
- Developed an AWS Lambda and Apache C module implementation of the Refget protocol, liaised with the major cloud providers on hosting instances of the API and mirroring EBI data for user of their services
- Implemented new REST APIs for projects with partner organizations using Python/Django
- Lead the redesign of the Ensembl API course, created/delivered our first REST API course, taught the courses in the UK and Taiwan
- Conducted technology survey and drafted specifications for rewrite of the Ensembl REST API
- Taking a leadership role in selected inter-team projects, mentoring and supervising junior team members
- Serving on technical interview panels for new recruits

Development environment: Perl, Python, C, Django, Catalyst, NodeJS, Ansible, AWS (Lambda, S3), MySQL, Postgresql, OpenAPI, ETL pipelines

Brinkman Laboratory, Simon Fraser University (Burnaby, Canada) **Dec 2002 – Sept 2015**
Lead Software Developer

- Oversaw design of software and IT infrastructure for multi-million dollar international research projects, coordinating team members and deliverables, and ensuring a robust final product
- Systems architect for the group's computational cluster and web services, ensuring high availability and security requirements of systems
- Designed bioinformatics tools and pipelines, worked with the team on their implementation
- Developed, maintained and enhanced bioinformatics web services and tools used by researchers globally (PSORTb, PSORTdb, IslandViewer, Ortholuge, MicrobeDB)
- Wrote an interactive genome visualization library (IslandPlot) in D3 to better assist the navigation of genomic data in IslandViewer
- Create a job scheduler for for analysis pipelines scaling out to thousands of concurrent jobs
- Developed machine learning algorithms to predict biological processes using Perl and C++
- Mentored graduate students and supervised junior team members and coop students
- Liaised with campus IT and external collaborators on technical requirements and interoperability for projects
- Contributed to competitive, peer-reviewed grant authorship
- Presented software and research results at half a dozen large conferences around the globe

Development environment: Perl, Python, Django, C++, Machine learning (SVMs, HMMs), Javascript, D3, KVM/libvirt, MySQL, Spark, ETL pipelines

Seedlink Technologies (Shanghai, China) **Dec 2013 – Apr 2015**
Research & Technology Lead

- Developed a machine learning based natural language processing algorithm for their candidate evaluation product
- Conducting security audits of code base to identify possible threat vectors
- Advised on architecture for their software, development road map, and technologies

Development environment: Python, Django, Machine learning (NLP)

Antarcti.ca Systems Inc. (Vancouver, Canada) **Jul 2000 – Nov 2002**

Sr. Unix System Administrator, Web Operations Lead, Developer

- Maintained company's server farm, ensured redundancy, security and high availability of systems
- Conducted capacity planning, upgrading systems as needed, working with vendors and co-location providers
- Worked with developers on deployment planning for client code, ensuring smooth deployment of patches and updates with no visible downtime
- Built tools to automate provisioning, deployment, failure recovery and system monitoring
- Implemented features for the company's main software product (VisualNet)

Development environment: C, Perl

LiquidMatter Systems

1998 – present

Software Consultant

- Implementing projects for clients, primarily e-commerce and CMS customizations
- Hosting websites and mail servers for clients and non-profit organizations
- Managed dedicated servers for clients, ensuring high availability and robust security
- Automated provisioning of servers with Ansible and backup/restores via Amazon S3

Education

University of British Columbia **1998 – 2001**

B.Sc. Computer Science

Selected Publications

Yates AD, Adams J, Chaturvedi S, Davies RM, Laird M, Leinonen R, Nag R, Sheffield NC, Hofmann O, Keane T (2021). **Refget: standardised access to reference sequences.** bioRxiv 2021.03.11.434800; doi: https://doi.org/10.1101/2021.03.11.434800

Bertelli C, Laird MR, Williams KP, Simon Fraser University Research Computing Group, Lau BY, Hoad G, Winsor GL, Brinkman FSL (2017). **IslandViewer 4: expanded prediction of genomic islands for larger-scale datasets.** Nucleic Acids Res. Volume 45, Issue W1, 3 July (2017) pW30-35.

Ruffier M, Kähäri A, Komorowska M, Keenan S, Laird MR, Longden I, Proctor G, Searle S, Staines D, Taylor K, Vullo A, Yates A, Zerbino D, Flicek P. **Ensembl core software resources: storage and programmatic access for DNA sequence and genome annotation.** Database (Oxford). 2017 Jan;2017(1).

Peabody MA, Laird MR, Vlasschaert C, Lo R, Brinkman FS. (2016). **PSORTdb: expanding the bacteria and archaea protein subcellular localization database to better reflect diversity in cell envelope structures.** Nucleic Acids Res. Volume 44 (2016) p.D663-8.

Dhillon BK, Laird MR, Shay JA, Winsor GL, Lo R, Nizam F, Pereira SK, Waglechner N, McArthur AG, Langille MG, Brinkman FS. (2015). **IslandViewer 3: more flexible, interactive genomic island discovery, visualization and analysis.** Nucleic Acids Res. Volume 43 (2015) p.W104-8.

Laird MR, Langille MG, Brinkman FS. (2014). **GenomeD3Plot: a library for rich, interactive visualizations of genomic data in web applications.** Bioinformatics (Oxford, England) Volume 31 (2015) p.3348-3349.

Dhillon BK, Chiu TA, Laird MR, Langille MG, Brinkman FS. (2013). **IslandViewer update: improved genomic island discovery and visualization.** *Nucleic Acids Res.* Volume 41 (2013) p.W129-32.

Whiteside MD, Winsor GL, Laird MR, Brinkman FS. (2013). **OrthologeDB: a bacterial and archaeal orthology resource for improved comparative genomic analysis.** *Nucleic Acids Res.* Jan;41(Database issue):D366-76.

Breuer K, Foroushani AK, Laird MR, Chen C, Sribnaia A, Lo R, Winsor GL, Hancock RE, Brinkman FS, Lynn DJ. (2013). **InnateDB: systems biology of innate immunity and beyond--recent updates and continuing curation.** *Nucleic Acids Res.* Jan;41(Database issue):D1228-33.

Langille MG, Laird MR, Hsiao WW, Chiu TA, Eisen JA, Brinkman FS. (2012). **MicrobeDB: a locally maintainable database of microbial genomic sequences.** *Bioinformatics.* Jul 15;28(14):1947-8. doi: 10.1093/bioinformatics/bts273. Epub May 9.

Yu NY, Laird MR, Spencer C, Brinkman FS. (2011). **PSORTdb--an expanded, auto-updated, user-friendly protein subcellular localization database for Bacteria and Archaea.** *Nucleic Acids Res.* Jan;39(Database issue):D241-4.

N.Y. Yu, J.R. Wagner, M.R. Laird, G. Melli, S. Rey, R. Lo, P. Dao, S.C. Sahinalp, M. Ester, L.J. Foster, F.S.Brinkman (2010) **PSORTb 3.0: improved protein subcellular localization prediction with refined localization subcategories and predictive capabilities for all prokaryotes.** *Bioinformatics*. 1;26(13):1608-15.

D.L. Fulton, Y.Y. Li, M.R. Laird, B.G. Horsman, F.M. Roche, F.S. Brinkman (2006) **Improving the specificity of high-throughput ortholog prediction.** *BMC Bioinformatics* 7:270.

J.L. Gardy, M.R. Laird, F. Chen, S. Rey, C.J. Walsh, M. Ester, and F.S.L. Brinkman (2005) **PSORTb v2.0: Expanded prediction of bacterial protein subcellular localization and insights gained from comparative proteome analysis.** *Bioinformatics.* 21:617-623.

Rey, S., M. Acab, J.L. Gardy, M.R. Laird, K. deFays, C. Lambert, and F.S.L. Brinkman (2005). **PSORTdb: A Database of Subcellular Localizations for Bacteria.** *Nucleic Acids Research*. 33:D164-168.

UBC Amateur Radio Society Basic Qualifications Manual, 4th Edition
Editor, 2002