# Jeff Breadner B.A.Sc.

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## Experience Highlights: Roles

### Senior Data Engineer
*Data, Analytics & Optimization, Modular Mining Systems*
- Responsible for the design, construction, and release of the infrastructure to copy Modular Mining application data from mines to the cloud
- Jointly develop Data Governance policy and procedures; developing data governance procedures for the D,A&O group, responsible as data steward for all data under D,A&O's control
- Responsible for increasing data literacy by providing training to worldwide Modular staff, educating personnel on the responsible use of data and our reporting framework

### Manager, Product Supportability
*Product Development, Modular Mining Systems*
- Manage a team of 6 developers (3 in Tucson, 1 in Vancouver, 2 contractors in Ukraine) and 4 technical writers (in Tucson)
- Responsible for making Modular Mining's products more supportable
  - Minimize service downtime during upgrades and support events
  - Reduce skills and knowledge required to perform support tasks
  - Improve the reliability and reduce the risks in support processes
- Oversee development of support tools, like Device Manager and Prerequisite Analyst.
- Develop support tools, like MineAlert Manager, and tools for DISPATCH 5 and other Modular products.
- Assist with the architectural design of tools developed by my team.
- Maintain multiple business-critical systems, like TFS, Atlassian Confluence wiki page, etc.
- Create and maintain ETL scripts importing data from cloud-based systems like Harvest and ZenDesk.
- Acting Product Manager for PowerView, the ETL / reporting system for DISPATCH 5.

### Manager, Product Deployment
*North America Region, Modular Mining Systems*
Oversee and direct work on our highest-risk projects.
- Manage a team of 3 senior engineers.
- Closely coordinate work and resources with other managers in our group.
- Work closely with our global support and product development teams in doing field tests for new products or major upgrades.
- Responsible for staying within budget, setting yearly budget for Product Deployment department.

### Manager, Technical Services
*North America Region, Modular Mining Systems*
- Manage a team of up to 18 engineers and 6 hardware repair / hardware install personnel – more than half of the North American region.
- Prioritize and assign work, including software engineering and hardware install personnel for major installs and upgrades ($1M - $5M projects).
- Hire and train new staff.
- Develop and compile Key Performance Indicators to track staff effectiveness.
- Perform personnel reviews.
- Responsible for staying within budget, setting yearly budget for Technical Services department.

## Experience Highlights:  Skills

### Data Engineering
- Created web-based (Node.JS) framework to identify and extract data from Modular Mining's DISPATCH system, while providing visibility to on-site staff and Modular Mining support members regarding the system's activities.  Extracted data would be sent up through Modular's data pipeline, eventually landing in the Komatsu Mining Analytics Platform (KMAP) and its Snowflake database.
- Integrated with existing Site-to-Cloud and Cloud-to-Site data movement architecture developed by Modular Mining's MineCare team.
- Wrote Azure Functions (Node.JS) to ingest JSON files sent from site into Snowflake database, performing several data transformations in the process.
- Comfortable with the Azure framework, am familiar with several core Azure object types, including: virtual machines, Blob storage accounts, Azure functions, key vaults, Docker repositories, etc.
- Comfortable creating Docker images and stacks, and automating builds & deployments using Azure DevOps pipelines

### Application Development / Databases
- Created MineAlert Manager and several ETL systems importing data from cloud-based systems like Harvest and ZenDesk in JavaScript / Node.JS, variously using MS SQL Server, MySQL, Mongoose and Firebase as a database
- Strong experience with Snowflake and its variant of SQL, including writing JavaScript-based stored procedures.
- Deep experience in MS SQL Server T-SQL query writing, database design and system administration.
- Currently work with ANSI SQL, Snowflake SQL, Transact-SQL, JavaScript / Node.JS and Linux-based scripting languages.
- Revised and maintained mine databases for Gibraltar Mines (Informix 4GL) and Kemess Mine (MS Access 2000).
- Co-authored AI (genetic algorithm) optimal unit commitment software for BC Hydro in VBA / MS Excel 2000; this was presented at the Third International Conference on Intelligent Processing and Manufacturing of Materials (IPMM). http://jeff.breadner.net/work/AI/IPMM_Paper.pdf

### Data Analysis
- Have developed and overseen long-running data analysis projects; monitoring the quality of data generated by our DISPATCH system, investigating the problem data to identify the root cause of the problem, etc.
- Used a wide variety of data sources - MS SQL Server-based data, using shell scripts in Linux to generate data, moving them to MS SQL Server for aggregation, and into MS Excel and SSRS for data visualization
- Have performed similar analysis on internal data -- how tickets are handled, looking for patterns in reported issues to find product defects, etc.
- Write data visualizations using Ruby on Rails and static JavaScript-based libraries, pulling live data on the fly to create constantly updating charts.
- Very skilled at moving through the entire problem statement - analysis design - data collection - analysis - presentation steps in performing an analysis.

### UNIX/Linux Administration
- Red Hat Certified Technician on RHEL5; certificate number 605007132713436.
- UNIX/Linux OS specialist in the North American region of MMS, with PI/GS and IT routinely relying on my expertise.
- Deep experience using many Linux distributions (starting with Slackware 3.0 with kernel 1.2.13, recently focused on Red Hat Enterprise and Debian/Ubuntu variants) plus Sun Solaris 2.6 through 10 for Sparc processors.
- Built dynamic KickStart script framework to automatically install Red Hat Enterprise Linux and DISPATCH, based upon input to an internal web page.

## Technical Support
- Provide 2$^{nd}$ / 3$^{rd}$ tier support to North American and global customers of Modular Mining 2019-current.
- Provide 1$^{st}$ tier support to North American customers of Modular Mining 2002 - 2014.
- Regarded as the key support resource for several products – DISPATCH 5, PowerView, MasterLink wireless networks.
- Very effective in supporting all Modular Mining's products deployed within the North America region.
- For more than five years, one of a team averaging two people on rotation to provide customer support 24/7/365 to most MMS customers and products in Canada.
- For seven years, one of a team averaging five people providing 24/7/365 support to all MMS customers in USA, Mexico, Columbia and Canada.
- Maintain an excellent, friendly rapport with all customers.
- Trained most NA DISPATCH Engineers how to maintain their systems, and have built most of their DISPATCH and PowerView systems.

## Trainer
- In 2014 and 2015 teach 1-day data analysis class to students once per year.  I developed and maintained all coursework.
- From 2004 - 2015, teach 1-day PowerView training course to clients once or twice per year plus custom events and content on site, I developed and maintain most of the coursework.
- From 2005 - 2015, teach 1-day UNIX (Rev-D) and 1-day Linux (MasterLink) administration courses to clients once or twice per year plus custom courses on-site.
- Taught other 1-day courses to internal personnel, like UNIX Shell Scripting.
- Often asked for help from new hires and experienced engineers alike; I'm happy to share knowledge and encourage others to learn.

## Virtualization
- Key member of team that designed standard VMware cluster solution for sale to clients.
- Designed and administer in-house VMware cluster used for testing and training purposes.
- Designed, deployed and maintain VMware solution to keep in-house designed RMA testing processes running after the aging hardware it was designed on was about to die.
- Routinely work with Azure, VMware, QEMU/KQemu, Google, and VirtualBox virtualization technologies.

## Relevant Work History

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|---|---|
| *September 2019 – Current* | Senior Data Engineer<br>Data Analytics & Optimization<br>Modular Mining Systems Inc. (Tucson, AZ, USA) |
| *April 2019 – August 2019* | Principal Deployment and Support Engineer<br>Software Engineering<br>Modular Mining Systems Inc. (Tucson, AZ, USA) |
| *April 2015 – April 2019* | Manager, Product Supportability<br>Product Development<br>Modular Mining Systems Inc. (Tucson, AZ, USA) |
| *July 2013 – March 2015* | Manager, Product Deployment<br>North America Region<br>Modular Mining Systems Inc. (Tucson, AZ, USA) |
| *July 2010 – July 2013* | Manager, Technical Services<br>North America Region<br>Modular Mining Systems Inc. (Tucson, AZ, USA) |
| *September 2008 – July 2010* | Principal Project Engineer<br>North America Region<br>Modular Mining Systems Inc. (Tucson, AZ, USA) |
| *July 2002 – September 2008* | Project Engineer<br>North America Region<br>Modular Mining Systems Canada, Ltd. (Port Coquitlam, BC, Canada) |

| *Summer 2001* | Mining Engineering Student |
| | Kemess Mine (Northern BC, Canada) |
| *Summer 2000* | Mining Engineering Student |
| | Bullmoose Operating Corporation (Tumbler Ridge, BC, Canada) |
| *Summer 1998* | Mining Engineering Student |
| | Elkview Coal Corporation (Sparwood, BC, Canada) |
| *Summer 1993* | Mining Engineering Student |
| | Gibraltar Mines (McLeese Lake, BC, Canada) |

## Relevant Education

| *1998 - 2002* | Mining and Mineral Process Engineering – Mining Option |
| | University of British Columbia (Vancouver, BC, Canada) |
| *1996 - 1998* | Mining Technology |
| | British Columbia Institute of Technology (Burnaby, BC, Canada) |

## Volunteer Experience

| *2018 - 2020* | Robotics / Programming instructor / mentor |
| | The Abbie School (Tucson, AZ, USA) |
| *2015 - 2017* | Robotics team coach |
| | The Rising School (Tucson, AZ, USA) |

## Continuing Education

| *2010* | Dale Carnegie High Impact Presentations |
| *2009* | VMware 3.5-4.0 Condensed Accelerated Immersion |
| *2007* | Red Hat Networking and Security Administration (RH253) |
| | RHCE Rapid Track (RH300) |
| *2006* | Querying Microsoft SQL Server 2000 with Transact-SQL (MS-2071M) |
| | Crystal Reports – Report Design I and II (RD110R2/RD210R2) (customized) |
| *2005* | Cisco Aironet Wireless LAN Fundamentals and Site Survey (AWFSS) |
| *2004* | Programming a Microsoft SQL Server 2000 Database (MS-2073) |
| | Designing and Implementing OLAP Solutions using Microsoft SQL Server 2000 (MS-2074) |