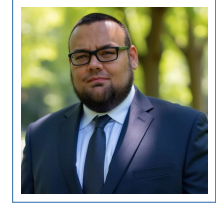


Jeffrey Freeman

Curriculum Vitae

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"Happiness does not come from doing easy work but from the afterglow of satisfaction that comes after the achievement of a difficult task that demanded our best." - Theodore Isaac Rubin

25

Years of
Overall
Experience

22

Years of
Public
Speaking

20

Years of
Management
Experience

40

Maximum
Team Size
Managed

7

Positive
References

Computer skills

Advanced

APACHE JENA, ARTIFICIAL NEURAL NETWORKS, BAYESIAN NETWORKS, BIG DATA, DATABASES, CXF FRAMEWORK, ELASTICSEARCH, EVOLUTIONARY COMPUTING, GENETIC ALGORITHMS, GRAPH DATABASES, GRAPHICAL MODELS, GENETIC PROGRAMMING, HADOOP, HIBERNATE, HIDDEN MARKOV MODEL, INFERENCE ENGINES, J2EE, JAVA, JAVASCRIPT, JAXP, JDBC, JSP, LINUX, MACHINE LEARNING, MAP REDUCE, MARKOV CHAINS, MONGODB, MULTITHREADING, MS SQL, MYSQL, NAIVE CLASSIFIERS, NATURAL LANGUAGE PROCESSING, NOSQL, ORACLE DATABASE, POSTGRESQL, REGRESSION ANALYSIS, RDF, RESTFUL, SAX, SELF ORGANIZING MAPS, SEMANTIC COMPUTING, SOAP, SPIKING NEURAL NETWORKS, SPRING, SPRING BOOT, SPRING MVC, SQL, TINKERPOP, TITAN DATABASE, UML, XML

Intermediate

AWT, BASH SCRIPT, C, C++, CSS, HTML5, JAVA NATIVE INTERFACE, JAVASERVER FACES, MICROSOFT WINDOWS, OAUTH, PYTHON, RUBY, SCALA, TOMCAT, DIGITAL SIGNAL PROCESSING, SAML, SWING

Basic

ASSEMBLY, DOCKER, \LaTeX

Experience

Career

2024

Chief Technology Officer & Founder, CLEVERTHIS, INC., Delaware.

As the CEO and Co-Founder of CleverThis, Jeffrey Freeman has been pivotal in building the company from the ground up, successfully raising a multi-million dollar pre-seed funding round to fuel its ambitious vision. Under his leadership, CleverThis has developed a revolutionary data science platform that transforms raw data into actionable solutions with unprecedented speed and accuracy. By harnessing the power of automated pipelines and novel machine learning algorithms, the company delivers results in days rather than months, setting a new industry standard. Jeffrey's strategic vision and innovative approach have been instrumental in establishing CleverThis as a leader in the field, driving the company's mission to revolutionize data science through cutting-edge technology.

In addition to his executive role, Jeffrey serves as an Advisory Committee Appointee to the World Wide Web Consortium (W3C) on behalf of CleverThis. In this capacity, he manages all interactions with the W3C, administering his team to ensure seamless collaboration and effective communication. Jeffrey is responsible for proposing new standards and recommendations, leveraging his expertise in semantic web technologies to influence the future direction of web standards. His role involves engaging with top leadership at the W3C, where he advocates for innovative solutions and represents CleverThis's interests in shaping the digital landscape. Furthermore, Jeffrey manages a technical team of approximately 20 people, overseeing more than five different internal projects. Through these efforts, he ensures that CleverThis remains at the forefront of AI innovation, integrating domain knowledge with advanced AI capabilities to deliver tailored solutions to clients.

2021
2023

Chief Information Officer & EVP, SCENTECH MEDICAL, LTD., Rehovot, Israel.

Initially hired as a consultant charged with spearheading a groundbreaking **breath analysis system** for identifying diseases in humans quickly and accurately. First three months saw a working prototype with a 91% accuracy in identifying COVID from a breath sample.

Transitioned project from prototype to production as **CIO** and **EVP**. Leadership spanned across **Chemistry, Clinical, and Information Technology** departments, overseeing all company operations aside from legal matters.

Strengthened external relationships through substantive dialogues with clients and investors. Managed a team of over 20, fostering **mentorship** and growth within the teams. Sometimes filled in for the role of a senior developer due to budget constraints, contributing to **source code** and **architectural design documents**

Defined **core algorithms** and **frameworks**, steering the company's technological direction. Handled hiring and firing, managed budget, and collaborated with CEO to shape the company's vision and strategic direction.

Experience at Scentech Medical, Ltd. was marked by technical expertise, strategic leadership, and commitment to innovation. Skills honed in **managing multidisciplinary teams**, navigating **product development** complexities, and driving growth in a technologically driven, fast-paced environment. Successful development of the breath analysis system stands as a testament to team capabilities and the potential of technology to revolutionize healthcare.

2007
2023

Chief Technology Officer & Research Scientist, SYNCLEUS, INC., Philadelphia, PA.

As the founder of Syncleus Inc., my tenure since 2007 was marked by strategic leadership in the capacity of **Chief Technology Officer, Software Architect, and Project Lead**. My role encompassed the successful oversight of over 100 projects, ensuring strict adherence to timelines, and fulfilling intricate project requirements. Syncleus Inc., a company specializing in **Big Data** and **Data Analytics**, thrived under my leadership, with a team ranging from 15 to 40 professional staff members, including 15-35 developers at any given time, with an average team size of 20.

The company's unique work environment leveraged the advantages of a **remote** setup, including **open-source contributors**, which fostered innovation and productivity. Apart from my leadership role, I was hands-on with numerous projects, particularly when faced with tight deadlines or complex technological challenges. My involvement spanned the development of many of the **core algorithms**, thereby driving the technological growth of the company.

A significant part of my role involved **mentoring** junior team members, leading the design of new system **architectures**, and coding implementations. My expertise was heavily utilized in working with both standard and non-standard stacks, including **Tomcat, Java, J2EE, Hibernate JPA, NoSQL Databases, MongoDB, TinkerPop, Hadoop, Apache Jena**, and related technologies. Syncleus's mission statement resonates with the ethos of **open-source**, which is reflected in both its consumption and production of **open-source libraries**.

My work at Syncleus was characterized by a focus on **Artificial Intelligence, Big Data, Graphical Models, Statistical Analysis, Regression Analysis, Distributed Processing, Multithreaded Parallel Processing, Natural Language Processing, Semantic Computing, and Evolutionary Computing**. Upholding high standards across all projects, **Unit Testing, Good Coding Practices, and comprehensive Documentation** were of paramount importance.

The development of both traditional and novel technologies was a key aspect of my role, including **Backprop Neural Networks, Self-organizing Maps, Bayesian Networks, State Vector Machines, Markov Chains, RDF, MapReduce, Hidden Markov Models**, among others. Furthermore, the application of advanced mathematics, such as **Graph Theory, Linear Algebra, Statistics, Vectors, and Complex Numbers**, was integral to the job.

1997
2002

Chief Technology Officer & Programmer, SWAPOO, INC., Philadelphia, PA.

I founded this company in 1997 and acted as **Project lead** for a team of 2 other programmers. Published a **client-server** application, named Swapoo, a **file-sharing** program similar to Napster written in C++. Within the first week of publication we had over 32,000 hits per day as well as links on over 10,000 web sites with no cost to advertising. Responsibilities included acting as a **spokes person** for interviews in **over 30 national news reports** including **CNBC** twice, **front page of USA Today, Slashdot.org, CNET news twice, ZDNet, Fortune magazine, Business Week, and CNET Radio 910Am San Francisco**.

Worked to develop the precursor to the Swapoo **client-server** in **Java** as well as **multi-platform C++**, called RomNET. **MS SQL database** interfaced via **SQL** and **ODBC** to store user information. It implemented file-specific **compression algorithms** to greatly improve file transfer times. Established design procedures using **UML** and **unit tests** to improve stability. The system utilized **TCP** client-to-client and client-to-server protocols. The network and **search algorithms** were governed by **machine learning algorithms**.

Consulting & Contracting

2015
2017

Technical Lead, TREELINE INTERACTIVE, San Diego, CA.

Consultant and team lead focusing on **Java J2EE, Hibernate JPA, and CFX Frameworks**. Also acted as a **Big Data** Consultant across several projects, and authored several novel algorithms of the Graphical Model type for Treeline. Worked heavily with the **Elasticsearch** as part of the back-end, as well as **Spring** frameworks.

2014
2015

Technical Lead, COMCAST, Philadelphia, PA.

Worked as a lead programmer on Comcast's new back-end providing TV and Movie metadata for their various services. I also worked on various components performing **Big Data** analysis. The database access was at first based on **Hibernate JPA** but I was in charge of moving most of that over to **NoSQL**, specifically **MongoDB**. The backend also used numerous technologies including **Elasticsearch**, and **RESTful** webservices. Spring frameworks were used heavily in particular **Spring boot**, and **Spring MVC**.

2013
2014

Technical Lead, MCKESSON HEALTH SOLUTIONS, King of Prussia, PA.

Managed a team of 14 to develop Contract Manager, a contract authoring, contract repository, and contract negotiation suite. The product was built using **Java J2EE** technologies. The team consisted of developers, QA testers, and business analysts. Was responsible for overseeing product's **full life cycle** including requirements gathering, development, technology review, quality assurance, support, and release. Worked heavily administrating and mentoring for the **GIT** source repository including **migration from SVN**. Was responsible for all phone screening and face-to-face interviews. Worked heavily with implementing and integrating **Activiti workflow engine** as new functionality. Proposed and implemented **Apache Jena Semantic Web** technologies for managing metadata throughout the application. Contract Manager ran on **Oracle 10g** database server. Was also responsible for migrating from a **Torque ORM** to **Hibernate JPA** ORM. Also responsible for mentoring the team and conducting all **code reviews**. Hosted weekly classes on programming topics such as **Java collections**, **Java concurrency**, **Graph Theory**, **time complexities**, and many other topics. This position was a 6 month contract to hire, however I was unsatisfied with the company and choose not to continue with the company.

2012
2013

Technical Lead, SIEMENS, Malvern, PA.

Worked on a **Linux** package management capable of installing, updating, and configuring packages once installed. Technologies used include **Java** and **Scala** programming languages, **REST** based communication using **Dropwizard**, and **Hibernate JPA** for the database abstraction layer. **Spring** fraeworks were used heavily throughout the stack.

2006
2007

Software Architect & Programmer, FEMA, Virginia.

Developed & Designed FEMA's most mission critical application called **ADD, Automated Deployment Database**. ADD was developed in response to the Katrina hurricane disaster. The software is responsible for determining the logistical deployment of emergency workers during a disaster. At the core it is a **decision engine** which suggested deployment schemes based on the conditions at hand. The project used **Oracle 92g** as the back end, and the **Ibatis** framework. Responsibilities included acting as senior developer on the project consisting of 5 other programmers as well as the being in charge of all **database** responsibilities, in particular writing all the **PL/SQL**. The front end used **Spring**, a **MVC framework**. The contract with the company was only for 3 months; Chose not to renew that contract.

2005
2006

Technical Lead, FREEWEBS, INC. (NOW WEBS, INC.), Silver Springs, MD.

This company was started by the old owners of WebOS, a previous employer. Primary responsibilities included design and implementation of **regression analysis** and **statistical analysis** software.

One role in particular was **project lead** for the internal and external usage statistics and analysis software. The system utilized a large collection of **machine learning algorithms** to compute vital information about its users. This information would generate suggestions to improve traffic into specific areas of the site and provide deep analysis of what influences a users decisions. The project used a **PostgreSQL** database and later moved to **Oracle database**. The system had to process over 4 million records per hour in real time and produce in-depth **statistics** on the data. The entire application was written in **Java** using a **J2EE** webapp to display the results. It included an administration tool, also developed using **J2EE**. The daemon portion of the tool, responsible for injecting the statistics into the database, used **XML (JAXP/SAX)** configuration files. **Java-script** and **DHTML** was also used extensively on the front-end. All of which required the **deployment and management of Tomcat**.

A supplementary role was as a **project lead** on a user survey system done in **Java** and **J2EE**. The system automatically generated surveys based on which questions in the database were most relevant to the individual. **Oracle** was used as the database back end.

2003
2005

Technical Lead, BOUNDLESS, LLC., Philadelphia, PA.

Worked on a **complete life-cycle** 2 year endeavor with 3 programmers to develop a **distributed network** that would efficiently exchange information needed for **genetic algorithms**. The final system was a **client-server network** written in **Java**, using a **MySQL database** and **SOAP communications**.

The most recent work was focused on **image compression** using **Artificial Neural Networks** and **Genetic Algorithms**. Our project resulted in a novel algorithm for lossy image compression that was better then JPEG. Responsibilities included acting as **lead programmer** on the project, which consisted of 5 other programmers and was written mostly in **Java** utilizing some **JNI**. **J2EE** with **tomcat** hosted the user interface for demos of the compression. Was tasked with **deploying and maintaining** the **Tomcat** server.

2001
2003

Software & Hardware Engineer, U.S. DEPARTMENT OF HOMELAND SECURITY, MD.

Worked as a hardware and software engineer implementing a device for **microwave analysis**, the **CS-3001**, a proprietary Microwave Pulse Analyzer developed to analyze microwave signals. The system triangulates the source of a signal, detects intelligent data within a signal, finds hidden signals in the noise floor, and more. Primary responsibility was to implement the **Java swing** graphical interface via an applet hosted on the on board hardware, as well as control the hardware's registers. We implemented the **digital hardware designs** in **VHDL** for the on board **FPGA**. I was also able to contribute to aspects of the analog designs and played a major role in designing related antennas systems. Technologies included **signal processing**, **Cooley-Tukey Fast Fourier Transforms**, **graphing and visualization** using **swing** components. As well as experimental components such as **machine learning** algorithms to detect hidden signals in the noise floor.

2000
2001

Sr. Software Engineer, WEBOS, INC., Columbia, MD.

Lead programmer of Programming.com's **client-server** network using **Oracle database** for the back end. Communication was **encrypted** using a number of **public/private key algorithms**. It was written in **Java**. **UML** was used to design before writing code. It contained a user friendly **AWT GUI**. Also included a critical error **phone notification system**; in case of a system crash it would dial a network of phones and send out E-mail notifications.

Responsibilities also included developing Programming.com's **HTML** front-end. It utilized a newsletter sign-up form, a counter to record user info, and an online **secure** newsletter publication tool all done in **J2EE**. A submission interface allowed recommended links to be automatically submitted and approved.

2009
2013

2009
2010

Volunteering

Tutor, *Advanced Math & Computer Engineering*.

Volunteer in my spare time tutoring college graduates in advanced math, computer science, and electrical engineering.

FIRST Competition, *Electrical, Mechanical, and Computer Engineering*.

Volunteer assisting high school students in the FIRST robotics competition (For Inspiration and Recognition of Science and Technology).

Algorithms & Technologies Invented

- dANN An artificial intelligence and genetic algorithms library which covers a large range of industry standard algorithms including artificial neural networks, graphical models, signal processing, naive classifiers, and much more.
- AIDE An automated inference engine, that includes a distributed server engine as well as an easy to use GUI for administration and processing of data sets.
- PIVM Population injected verhulst model, a mathematical model invented for modeling several types of systems such as spread of ideas via marketing, and word of mouth, as well a disease proliferation accounting for organic spread as well as the effects of travel.
- HAM Hyperassociative Map, a state of the art graph drawing algorithm capable of outperforming other algorithms in its class. The map is often used in distributed big data frameworks.
- GW Genetic Wavelets, a genetic algorithm that has been demonstrated to be superior to traditional genetic algorithms.
- NCI Neurally compressed image, a type of novel lossy compression algorithm noted for its ability to tolerate extreme data loss and still provide optimal data quality for all types of analog data including sound, images, and video.
- GAN Graph affinity network, a mathematical model to simulate key-receptor binding affinities in biological cells. Used as a component in several neural network models.

Public Speaking

- 2013 Live Web-casts on Artificial Intelligence and Evolutionary Algorithms
- 2012 Oral Presentation at the Free and Open Source Software Convention (FOSSCON)
- 2011 Oral Presentation at the Fifth IEEE International Conference on Semantic Computing
- 2007 - 2009 Lecture Series at Temple University Department of Computer science
- 2004 - 2006 Lecture Series at Drexel University Department of Computer Science
- 2002 Interview with Business Week Magazine.
- 2001 Live Radio Interview with CNET Radio 910 AM San Fransisco.
- 2001 Interview with Geek.com
- 2000 - 2001 Series of Live Interviews with CNET News
- 2000 Series of Live Interviews with CNBC News
- 2000 Live TV Interview with MSNBC news.
- 2000 Interview with Fortune Magazine.
- 2000 Front page interview with USA Today.

Interests

- Organic Chemistry
- Cellular Biology
- Mathematics
- Neuroscience
- Electrical Engineering
- Amateur Radio
- Genetics

Recommendations

- May 22, 2015 **Drew Morris**, *Board Member*, Syncleus, Inc..
"Jeff Freeman is an extremely impressive individual. It is a given that he is a brilliant developer and software architect but he is also an innovator. He is one of the most forward-thinking people I know and he is constantly attempting to address the hard problems that few other people are thinking about. Working with Jeff is pleasant, rewarding, and often eye-opening."
- January 15, 2014 **Kurt Seidel**, *Business Analyst*, McKesson Health Solutions.
"Jeff has a formidable intellect. He knows his stuff; he cares about quality code and optimization. Not only that- he is a nice guy and willing to share his knowledge. I would hire him for my start-up in a heart-beat!"
- July 26, 2013 **Lew Bloch**, *Java Developer*, Syncleus, Inc..
"For a couple of years I worked with Jeff reviewing and commenting on his AI library dANN, and for several months worked side by side with him to get Syncleus off the ground and funded. We had worked together before, at WebOS and various ad hoc projects. His work on dANN is brilliant and hard to duplicate even knowing the code, and the first big practical project eliciting sales opportunities from car dealership records using his AI library created solid results. Jeff has a great blend of entrepreneurial vision and detailed software design and implementation skills."
- July 25, 2013 **Michael Griffith**, *Java Developer*, Syncleus, Inc..
"One of the best programmers I've had the pleasure of working with, and a great teacher too. Very personable and an absolute genius!"
- June 3, 2013 **Seth Horne**, *Java Developer*, Syncleus, Inc..
"Jeff has designed a mind-blowing array of unique software. Syncleus, the benevolent open-source oriented corporation that he founded, will soon unleash its technology and forever change our future."
- February 25, 2013 **Mark Buckman**, *Sr. IT Consultant*, Be2X Information Technology.
"Genius! Jeff is an amazingly clever engineer at crafting solid software solutions. After working nearly 2 decades in the IT industry, I've rarely met an individual with such a breadth of knowledge and technical expertise. Working with Jeff was a pleasurable experience on many levels, as he displayed a dedication not often found in this day and age. His structured and refined approach to problem solving is both a welcome refreshment and an invaluable asset to any technical project."
- March 20, 2007 **Shervin Pishevar**, *President*, Freewebs, Inc..
"Jeff is a technical genius. He is one of the smartest scientists that I have ever met. He is going to achieve great things."