

Carl Free

AI Engineer / Machine Learning Engineer

carl@freeideas.com

24 York Road

Dublin, Ireland D06C1W9

+353 838837896

Value Offered	<ul style="list-style-type: none">• Well over 20 years heavy software development experience.• Many successful AI projects, even well before 2020's.• Mastery of a wide variety of programming systems, especially the "difficult" ones, and especially AI and machine-learning.• Proven ability to solve the most unusual and difficult architecture and production problems, whether they involve application of machine learning, advanced algorithms, integration with old legacy code, or advanced mathematics.• Excellent public speaker, teacher, and technical leader.• See http://app.ironmedia.com/resume for downloadable examples of work.
Skill Summary	<ul style="list-style-type: none">• Artificial Intelligence / Machine Learning: <i>EXPERT</i>• Java: <i>EXPERT</i>• J2EE / Spring: <i>STRONG</i>• Python: <i>EXPERT</i>• TensorFlow and PyTorch: <i>STRONG</i>• Flutter/Dart: <i>MEDIUM</i>• JavaScript / Node.js: <i>STRONG</i>• C++: <i>STRONG</i>• C# / .NET: <i>STRONG</i>• PHP: <i>EXPERT</i>• Go Language: <i>MEDIUM</i>• IBM Watson / BlueMix: <i>MEDIUM</i>• Blockchain / Smart Contracts: <i>MEDIUM</i>• LISPy Languages, esp. Clojure and Scheme: <i>MEDIUM</i>• Various flavors of assembly language: <i>MEDIUM</i>• Linux Platform: <i>STRONG</i>• Ability to quickly utilize new languages / systems / frameworks: <i>EXTRAORDINARY</i>
Experience	<p>MAY 2024 – present; Upland Software; Dublin Ireland and Austin Texas</p> <p>AI Engineer</p> <ul style="list-style-type: none">• Created "AI Software Factory" — a tool that starts with normal specification documents, and reliably produces well-tested super-maintainable correct software,

even for large-ish projects.

- Saved 90% of LLM token cost on large-PDF summarization. Devised a way to pull a small number of representative chunks from the vector database and get approximately the same summaries, with ~20% time savings and ~90% cost savings.
- Created "Virtual Employee" — a software product that runs on a VM and controls browsers, desktop software, control panels, and anything else a human user can control, by operating a Remote Desktop (RDP) session.

JAN 2022 – MAY 2024; IBM; Ireland

Senior AI Engineer

- Created prototypes of AI-enhanced, new product offerings. Examples: RAG systems, screen-reading automation, AI models that test other AI models, etc.
- Worked with Data Science researchers to create full-stack web apps, stand-alone desktop apps, and server-side APIs which demonstrate viability of new software products.

DEC 2012 – JAN 2022; IBM; Florida and Ireland

Senior Software Engineer

- Designed, implemented, and repaired high-performance custom software for many clients, such as Yum, Northrop Grumman, Lockheed Martin, and Shell Oil.
- Designed, wrote, and fixed web and mobile applications.
- Extended and maintained multi-million-line full-stack web apps.

NOV 2003 – DEC 2012; Outstart, Inc.; Lake Mary, Florida

Senior Technical Consultant

- Designed and implemented scalability solutions for training systems with thousands of simultaneous users, for both government and commercial organizations.
- Designed custom solutions for interoperability with popular software products and legacy systems.
- Wrote enterprise software that was sold to many Fortune 100 companies, as well as shrink-wrapped commercial software.
- Created monitoring and analysis tools for managing web applications with thousands of simultaneous users.
- Principle consultant to Australia's Department of Defense, worked at their facilities in Canberra to improve performance and stability of training systems.
- Chief consultant to US Navy. Led many engagements, resulting in solutions to many long-standing problems involving scalability and stability of training systems that serve many thousands of sailors.

JAN 2001 – NOV 2003; Convergys Corporation; Lake Mary, Florida

Developer/DBA & Senior Systems Analyst

- Wrote Java and C++ against large Parallel Oracle 8i databases (i.e. many terabytes, tens of millions of production transactions per day). Used JDBC, SQLJ, PRO*C/C++, and PL/SQL. Most of this programming was "database infrastructure", with much of the Java and PL/SQL running inside the Oracle database engines.
- Designed database and created software for an XML-based content management system for technical writers. Programmed the system with Enterprise JavaBeans, Java Server Pages, Java Servlets, and ColdFusion.
- Used formalized processes that included documenting designs and code — often using UML and Rational Rose, and holding code reviews.
- Created solutions for many long-standing database and development problems.
- Helped technical writers to research, understand, and express complex technical systems.
- Taught several introductory database and Java classes to employees.

MAR 2000 – JAN 2001; Maxcess Telephone & Internet; Orlando, Florida

Senior Developer/DBA

- Wrote Java, C++, and Perl to support operations, including:
 - A Trouble Ticket System with JSP and Enterprise Java Beans on an Oracle Application Server.
 - A Purchase Order System with Servlets and JDBC.
 - A Customer Service Interface on the Internet, with Perl CGI.
 - A proxy server Java application, used to "spy" on troublesome database interaction.
- Wrote Oracle PL/SQL, and debugged PL/SQL in commercial database software.
- Helped other developers with difficult or time essential problems; helped other developers with advanced SQL programming & debugging.
- Designed and implemented Oracle, Sybase, and Informix databases on Solaris and NT.

JUN 2000 – FEB 2001; Training Solutions Group; Orlando, Florida

Oracle Instructor (Part-time Evenings and Weekends)

- Taught "Advanced Database Design with Oracle", which consists of relational theory, SQL, and PL/SQL. Students were usually computer technicians of various backgrounds who had successfully completed at least three prior database courses.
- Taught Oracle DBA certification exam preparation classes.
- Installed and configured all Oracle servers and clients.
- Handled negotiations with Oracle for software licensing.

SEP 1996 – MAR 2000; Coleman Research Corporation; Orlando, Florida

Database Developer / Administrator

- Wrote many HR-oriented web applications with Java Servlets, Java Applets, and JDBC.
- Designed databases and back-end systems, including:
 - A Java application with JDBC and JavaBeans that synchronized a Sybase database with a VAX/VMS database. It read recent updates from Sybase, opened a telnet session to the VAX application, and entered the updates into user screens.
 - A Java application with JDBC that reads a COBOL program's source code, creates a relational database with a similar structure, then copies the COBOL program's data into the relational database.
 - A Perl CGI web-application security system.
 - Several MS-Access applications, and programs that integrate with MS-Access.
 - A custom application installer in Visual C++.
 - A web application framework for Oracle.
- Taught several corporate computer classes — both for end users and for fellow programmer/analysts.

JUN 1993 – JUL 1996; Lockheed Martin Electronics and Missiles; Orlando, Florida

Network Administrator / Programmer

- Wrote network & database oriented programs using Visual Basic, FoxPro and Clipper.
- Implemented & maintained file and print services for HR.
- Troubleshooter for any HR hardware or software problems.

MAY 1989 – JUN 1993; Lockheed Martin Electronics and Missiles; Orlando, Florida

Computer Technician

- PC repair duties and light programming.

1989 – 2015; Self Employed; Central Florida

Ballroom Dance Instructor

- Taught credit classes at University of Central Florida for 9 years.
- Primary instructor for The Dance Club of Central Florida for 20 years.
- Contracted for many clubs and organizations.
- President of Dance Club of Central Florida during the year 2000.

1985 – JUN 1988; Chelsey Surplus Insurance; Orlando, Florida

Programmer

- Wrote various types of software such as:
 - A program that dialed-up State of Florida systems to pull moving violation records.

- A front-end that integrated with TELEX to get quotes from insurance companies in London.

1983 – 1985; Forest Lake Academy; Forest City, Florida

Programming Assistant

- Wrote various types of software such as:
 - An artificial intelligence demonstration that carried an English conversation with a human being.
 - A bar-code reading system later used by the school's cafeteria and library.
- Assisted students in the programming lab.
- Graded programming tests and projects.

Education

- B.S. Computer Science; University of Central Florida
- Post-grad Comp-Sci studies w/ emphasis on Artificial Intelligence; University of Central Florida
- Oracle Database Administration; Diversified Computer Consultants, Orlando Florida
- Sybase Database Administration; PowerCerv University, Orlando Florida

Citizenship

- USA Citizen
- Currently employed in Ireland with a permanent work permit
- Currently applying for Irish citizenship