

## Dave Abercrombie

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### Summary

Extensive background in document and print technologies, image compression, OCR, file formats and standards, front-end applications, and many other technologies. Passionate about creating solutions and contributing to highly-performing backend algorithms.

### Core Strengths

Windows, Linux, UNIX, OSX, C, C++, CSH, Perl, PHP, Python, JavaScript, desktop applications, web site administration, email spam filtering, and much more.

### Professional Experience

**Electronics For Imaging (EFI)** - 17+ years - 4/04 to 7/21 in Fremont, CA; Staff Engineer

- Developed a system that allows a scanner and printer to behave like a copier.
- Improved various Variable Data Printing technologies, notably making PPML the first to be fully compliant with the PODi graphics standard.
- Supported a parallel processing engine for a multi-server print engine delivering over 2000 pages per minute.
- Incorporated Adobe's RIP engine as a second path to process PDF documents.
- Contributed to an interface with inline spectrophotometers (ILS) for various vendors.
- Owned a RESTful desktop application using wxWidgets to assist in monitoring and correcting the color quality of printers in a print shop while instructed from and reporting to a cloud application.

**Consulted** 1+ years - 12/02 to 4/04

Implemented automated stitching of a panorama image sequence.

**Xerox & Scansoft** - 7 years - 10/95 to 12/02 in Palo Alto, CA; Staff Engineer

- Key contributor to several programs that brought Mixed Raster Content (MRC), JBIG2, and TIFF-FX into Xerox & Scansoft products. When folded together, these technologies produce files roughly ten times smaller compared to previous methods. Products include Pagis Pro, TextBridge, FlowPort II, and libraries reused across organizations.
- Developed the proprietary file format XIFF, and I/O library for storing MRC documents with JBIG2 compression.

- Aligned XIFF with emerging standards TIFF-FX and ITULab, and implemented a TIFF-FX library as proof-of-concept while collaborating with the standards team.
- Enhanced several document processing tools such as: automated image enhancement, photograph detection, and Hierarchical Vector Quantization.
- Architected an optimized implementation to simultaneously generate multiple output renditions of PDF, TIFF, and TIFF-FX using pre-compressed JPEG, CCITT, and JBIG2 components.

**Caere Corporation** - 3 1/2 years - 1/92 to 10/95 in Los Gatos, CA; Senior Engineer

- Helped create new and innovative ways to improve the OCR accuracy of the flagship product.
- Various features added include: character and word accuracy measurements, word-based character recognition using dictionaries and trigrams, neural net integration and tuning, X-window tools for tracking OCR decisions during debug, and automatic page orientation.
- The accuracy measurement improvements became instrumental in deciding changes and decision thresholds, and became a broader neural network for the whole OCR implementation.

**Sperry/Unisys/Paramax** - 6+ years - 8/85 to 1/92 in Salt Lake City, UT; Research Engineer

- Lead developer for a team researching data compression algorithms for image data, focusing on Vector Quantization (VQ) for image compression.
- Wrote software tools to interface with video hardware prototypes, key in bringing in awards on several multi-million dollar contracts.
- Supported various research in data compression for Adaptive Huffman, Lempel-Ziv Welch, and Arithmetic Coding.
- Produced several algorithms complementary to VQ compression including: tree search methods and extensively non-uniform binary trees, codebook design research, classified vectors, readability of compressing bank check images, and encryption algorithms.

**Education**

B.S. in Electrical Engineering from the University of Utah with an emphasis in signal processing, stochastic processes, and computer design.

Senior Thesis was titled Extension to the Human Visual Model.