

## ACADEMIC AND CONSULTING WORK FOR INDUSTRY 4/2026 FOR AI/DECISION PROJECTS

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### INTELLIGENCE ANALYSIS TECHNOLOGIES

NSA Operations. 2003-2005. High-Speed Identification of Language and Script. Foreign language triage using data mining, morphology, and TF/IDF analysis. **Result:** Increased abilities in dozens of languages.

AFRL/SAIC. 2001-2005. Post-9/11 support of high-speed AI on streaming data. For automatic analysis and classification in multiple languages. Largest funded project at the time in WUSTL Engineering School; part of DARPA/ARDA/DTO/IAO/TIA infamous project; algorithms and data cleaning team leader among many well-known subcontractors such as BBN and FICO. **Result:** Provided high-tech option in grand challenge national priority project.

### MILITARY TECHNOLOGIES

McDonnell Douglas. Early 1990s. Sensor-fusion sanity checks and path-planning innovation. For F/A-18 E/F Super Hornet (also G-variant electronic warfare Growler). **Result:** Saved the project time, money, and embarrassment, by advising against taking a trendy algorithmic path later discredited.

US Army Signal Warfare Laboratory. 1985-1987. Doctoral work on thesis advisor's sponsored project to study data-fusion and interval-valued probability methods in AI. For practical battlefield ISR. **Result:** Provided deep expertise and innovation in emerging area of importance to tactical decisionmaking.

NAECON Conference. 2016. Early paper on reasoning about intentions of aerial drones (UAV/UCAVs) and swarms. Unsolicited. **Result:** Increased early interest in emerging area of importance to about airspace security decisions.

### HEALTH TECHNOLOGIES

Cleveland Clinic. 2007-2012. Advanced NLP/AI with front-end and back-end graph- and logic-based representations of data (WOT, RDF, NOSQL, and RDB flattening). For reporting surgical outcomes. Also studies of time-and-motion efficiency of data-ingest, user interfaces, ETL/cleaning, ransomware protections, and detection of errors using statistical outlier models. **Result:** Provided hospital with clear decision on AI investments wrt emerging EMR/EHRs.

One True Health Tech and successor company. 2022-2023. Design and programming support for innovation in medical records. For fine-granularity privacy control. **Result:** Helped existing large regional practice create a spinoff/startup company.

IEEE BHI Competition. 2019. Won as industry-level best programmer: medical patent search and visualization challenge. **Result:** Showed US programmers can still beat the best from Beijing.

NIH Proposed Search Interface. 2021. With summer intern who was former TA, a novel abstract keyword- and symbol-extraction tool for better/faster research of PUBMED literature. **Result:** Provided technical option as prototype: a less expensive, cleaner, more reliable and effective way to search the literature compared to chat/AI.

## START-UP TECHNOLOGIES

Civic Feed, now Peak Metrics. 2017-2019. Co-Founder of TechStars-accelerated LA-based company to do massive daily ingestion of public data sets and provide FlexSearch and automatic key-phrase extraction, abstractions, visualizations, and dashboards. Large early equity stake from US Air Force. **Result:** Advised doing disinformation-detection, leading to Defense Department as largest customer; provided DoD with new supplier of information services based on lean, agile, and current scripting/AI practices. Now a phrase-based intelligence service for general-purpose marketing analysis.

Skejul. 2014-2016. Advisor to CEO of startup to make AI-agent scheduling decisions without requiring personal calendars to be shared among humans. Constantly advised that their ambition should be scaled back to get to market sooner, rather than integrate first and fully with Microsoft software. **Result:** Gave CEO better spend path, though not taken.

Global Velocity. 2000-2012. Long relationship with company engaged in high-speed deep-packet filtering. For solving online intellectual property problems, data-loss prevention, web security, and national defense. Co-Patentor on founding technology, co-PI on biggest external project routed through company. **Result:** Gave company years of runway and founding technology.

StreamSearch. 1999. Advisor to CTO and CMO on user experience. Constantly advised that web developers were assuming too much connection speed and cpu speed. Built a replayer of web page experience, using logs to demonstrate the latency problem. **Result:** Showed CTO why engagement and adoption were lagging, though advice was too late to save from bankruptcy.

## OTHER INDUSTRIES

Cycorp. 2007-2012. Cleveland Clinic contract, sole local representative at hospital meetings and events (prior to zoom/teams/slack/remote-era). For home office in Austin, javascript program to visualize inferences in real-time. Much ETL/data-cleaning and -wrangling. Also emergency dashboard implementation for funding pitch to Canadian extraction site owned by major energy company. **Result:** Injected agile tech help on largest company contract (Cleveland Clinic), sustained for five years, allowing other engineers to work from Austin rather than quit.

XEROX PARC and Rochester. 1988. Proposals and reviews of uncertain inference methods for photocopier-component failure-prediction. **Result:** No important result beyond corporate presentation.

Southwestern Bell TRI. 1991. Reviewed existing expert system for deciding fair reimbursements for Yellow Page listing errors. **Result:** No important result beyond doctoral student involvement on his subsequent large project for Amdocs, which was similar.

Rockwell Palo Alto Laboratory. 1988. Worked on rational decisionmaking and statistics in AI: an updated version of reasoning from data with direct inference to interval probabilities. **Result:** Fresh, modern intellectual leadership for an emerging lab culture that housed a large portion of Stanford's AI group for the summer.

Digital Equipment Corporate Research. 1983. Summer intern, writing simulations of etherbridge concept. **Result:** Influential report with highest Corporate Engineer as co-author.

Dennis Hirota Civil Engineering. 1981. Summer hire, writing programs and designing range-query data structures for efficient and correct layout of profile-view blueprints. **Result:** Software result.

Industry Data Services. 1977-1981. Major programmer for provider of custom software to inventory, accounting, and sales, to a variety of local industries. **Result:** Software and services resulted.