BOB CRAVENS

Director · Manager · Lead - Software Engineering | Tech Leadership | Product Development

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♀ Verona, WI   Portfolio: https://rcravens.github.io/

Summary

With over 21 years of leadership experience in software engineering, I have a proven track record of executing strategic technical visions that align with business objectives and drive operational excellence. I am experienced at transforming the software engineering capability of an organization by leveraging industry standard best practices. I help teams architect infrastructure that is scalable, highly-available, and resilient. My expertise in diverse technology stacks, coupled with a passion for team building empower my commitment to developing innovative solutions.

Skills

- Software Engineering Leadership
- Agile & Scrum Methodologies
- Engineering Best Practices
- Strategic Planning & Execution
- CI/CD Pipeline Implementation
- Mentorship & Talent Development
- Large-Scale Software Architecture
- Cloud Infrastructure (AWS, Azure)
- Emerging Technologies

Professional Experience

Senior Manager Software Engineering   **August 2015 - February 2024**
GenesisCare (formerly 21st Century Oncology)

- Directed a team of 10+ engineers in the development of custom solutions.
- Enhance operational management and improve patient care quality.
- Collaborated closely with the CTO and executive leadership to translate business objectives into technical requirements.
- Spearheaded the architecture, development, and production pipeline of 2 products developed by the team for 9+ years.
- Directly added $15M+ annual billing to organization.
- Established relationships with stakeholders and sponsors to ensure the team delivered products that 100% passed user acceptance.
- Championed the company-wide adoption of products and processes released by the team leading to 5000+ daily users.
- Learned operational aspects of 5+ roles (e.g., RT, Physics, Dosimetry) to better understand needs and offer technical solutions.
- Architected resilient and scalable solutions providing 99.99% uptime.
- Operated the CI/CD pipeline for all products with zero downtime deployments.
- Ensured products met 100% of regulatory (e.g., HIPAA) and security requirements.

Senior Manager System Analytics   **January 2014 - August 2015**
Accuray (formerly TomoTherapy)

- Founded and directed a team dedicated to the quasi-realtime (<15 sec) data collection and analysis for radiation oncology products.
- Created a strategic plan and collaborated with the Executive team to create a budget exceeding $500,000.
- Led the architecture and development of robust data collection agents leading to 0% data loss.
- Integrated data collection agents into 90+% of the radiation oncology products that were deployed around the world.
- Architected and created a scalable data processing pipeline ensuring 0% data loss.
- Defined the architecture, design, and development of a web-based, user-friendly analytics / reporting platform.
- Collaborated cross-functionally to ensure product passed 100% of user acceptance tests.
- Empowered end-users to make informed decisions by delivering real-time tailored insights.
- Enabled proactive service opportunities that led to timely interventions.
- Facilitated remote service solutions (<15 minute), significantly improving operational effectiveness and customer satisfaction.

Research Software Manager   **January 2011 – January 2014**
Accuray (formerly TomoTherapy)

- Managed a team of developers and physicists tasked to cultivate research concepts and innovate solutions.
- Pioneered a user-friendly web-based quality assurance application used by Medical Physicists licensed at $100k per year per client.
- Automated collection of data and analysis of key machine quality assurance metrics.
- Transformed the medical physics daily, monthly, and annual testing processes, significantly enhancing operational efficiency.

- Improved patient care quality by enabling informed decision-making for medical physics teams.
- Automated the collection of system data to a central data warehouse providing essential proactive troubleshooting insights.
- Enhanced overall system reliability by creating a top 10 errors report per version allowing Engineering to target improvements.
- Significantly improved customer support capabilities with real-time data and remote access. (<15 minute response times)

Lead Applied Physicist   **January 2005 – January 2011**

TomoTherapy

- Spearheaded development and research initiatives focused on innovating solutions and processes.
- Elevated operational efficiency by reducing Manufacturing bunker time from 30 days to 1 day.
- Engineered the design and development of a user-friendly application that streamlines quality assurance processes.
- Revolutionized daily, monthly, annual, and ad-hoc testing processes for medical physics teams. (5 hours to 5 minutes)
- Trending and analytics enabled more efficient and informed decision-making.
- Led the technical development of an innovative application designed to facilitate remote diagnostics.
- Guided essential proactive troubleshooting by developing insights and metrics.

Physicist   **January 2003 – January 2005**

TomoTherapy

- Enhanced quality assurance processes for a novel radiotherapy treatment machine.
- Automated CT image commissioning within the manufacturing workflow and eliminated the need for on-site specialists.
- Reduced resource constraints and cut costs, which improved process efficiency.
- Streamlined the treatment planning commissioning process and reduced time from 30 days to 2-3 days.
- Innovated dosimetric twinning to standardized models and further reduced time from 2-3 days to 1-2 hours.
- Boosted production efficiency and reduced the need for specialized experts in the Manufacturing process.

Projects (https://rcravens.github.io/#/#portfolio)

ASSET IQ	ADAPTIVO	TQA
A comprehensive web-based clinical operations platform utilized by executives, operational leaders, and team members across various departments including Regulatory, Dosimetry, Physics, Engineering, BI, and HR.	A web-based patient quality assurance application used in radio-therapy (RT) departments to compare delivered versus planned treatment volumes. Allows the oncology team to alter the treatment plan when anatomical changes occur. This application is an FDA product that is marketed by Standard Imaging.	TQA (TomoTherapy Quality Assurance) is a calendar based tool that streamlines machine QA by providing automated data collection, analysis, and trending tools. TQA saves significant time and empowers Medical Physicists to perform required protocols (AAPM TG-148) in an efficient manner.
https://rcravens.github.io/#/gc_assetiq	https://rcravens.github.io/#/21c_adaptivo	https://rcravens.github.io/#/tomo_tqa

Education

PhD (all but dissertation) Electrical Engineering, Minor Physics

University of Wisconsin, Madison

MSEE, Electrical Engineering

University of Wisconsin, Madison

BSEE, Electrical Engineering

University of Wisconsin, Madison