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Over 13 years in robotics and automation, I've developed infrastructure that maintains reliability, survivability and recoverability, I know how to deal with situations such as event flooding, resource throttling, action prioritization, multiple resource coordination (transactional / 2 phase commit), resource recovery with automatic switching, workload balancing and workload prioritization.

**Programming languages:** Assembler, C, C++, PHP, Python, HTML, Javascript, Java, and several others.

**OS experience:** Unix (various distro's), Windows, z/OS, DOS/VSE, VM, AIX

**Robotics and automation related experience:**

- Identify and eliminate single point of failures.
- Implement multiple resource coordination (2-phase commit) to reduce risks with incomplete actions (where one of the required resources will fail).
- Implement TCP broadcast and multi-cast.
  - Resource discovery in multi-computer environment.
  - Eliminate the risks of server based communications (e.g. ROS pub/sub).
  - Ensure client survivability during critical resource recovery.
  - For multi-computer scenario's, greatly reduces TCP traffic.
- Advanced event handling
  - Event throttling to reduce the risks of event flooding or the loss of critical resources (e.g. One of the computers).
  - Event filtering to reduce overhead.
- Workload balancing and recovery for multi-computer environment. Implement methodology to ensure processes are not tied to a specific computer.
- Prioritization. Deals with disposable work, time critical work, event expiration, pre-emptable work and flooding.
- Implement required response driven activities. Ensures a resource completes an activity before allowing another activity to begin.
- Implement event and poll driven sensor controllers.
- Dynamic resource management. I2C master switching and I2C master failure takeover. Resource ID's that are used for simplified resource replacement (plug-n-play).
- One of the first to develop UI using touch driven webapp (HTML5 & javascript) to drive robot. Other robot's are not designed to tolerate long touch events.
- Implement scratch programming language interface allowing children to program the robot.
- Enhanced event processing language. Integration of sensor data into the event processing language.
- Cloud and big data experience. One key to ensuring resource availability.
- Implement VOIP for voice communications thru robot.
- Install, customize and maintain Unix systems (including various products).
- Experience running Unix in a headless environment. e.g. MobaXterm to access xWindows environment.
- Unix and Windows experience with TCP, xWindows, Apache, PHP, OpenCV, Mysql, filesystems and more.

**2010-2016 self:**

- See automation and robotics skills above.
- Develop and sell automation and robotic software product REMZ (Resource Event Manager for z/OS).

**2008-present TheTech Museum:**

- Some of automation and robotics skills above.
- Personally acquainted with CEO and Vice president because of my contributions.
- Complete redesign of Buster (the museums iconic telepresence robot). Has features that are more advanced than commercially available telepresence robots. Easily operated by children as young as 4 years old.
- Completed build of hexapod robot using same components as Buster.
- Personally rescued an important but unsupportable exhibit (constant maintenance and days of outages). My changes reduced this to 4 hours creating parts and occasional / quick parts replacement.
- Designed legal PC integrated AC power outlets for automated museum exhibit's.
- Pro-active maintenance for various exhibits. Instead of waiting for failures, I recognize when maintenance is needed.

**2008-2017 Rebuild Together Silicon Valley (RTSV.ORG help elderly, handicaped and disadvantaged remain in their home):**

- Recognized as an outstanding community service volunteer in bay area by Pizza my heart. Trip to Maui as recognition. Additional awards received at various times.
- Bathroom remodelling for wheel chair and handycap access.
- Various handycap improvements: wheel chair lifts, wheel chair ramps, grab bars, plumbing, electrical and more.
- Worked on a regular basis in support of the staff contractor.

**1999-2008 BMC Software:**

- See automation and robotics skills above.
- Develop new features and resolve bugs for AutoOperator and Patrol Enterprise Manager.
- Handle difficult customers and situations to improve customer relationship. Included foreign travel.
- On SAP High Availability development team.
- Worked in cloud and big data environment.

**1998-1999 Tibco Software:**

- Product development for the TIB (publisher / subscriber product).
- Porting team member the TIB to z/OS
- Implement 2 phase commit to ensure data in multi-system environment remains correct.

**1994-1998 Candle Software:**

- See automation and robotics skills above.
- Product development and problem resolution for AF/Opertor, Omegacenter Gateway and Candle Command Center.

**1987-1994 Unternehmens Beratung Schumann (In Germany)**

- Consultant to various well known German companies. Wrote system level programs, integrated

hardware and software

- Developed high speed parallel backup product for DOS/VSE.
- Developed VM easy install and upgrade product.

**1984-1987 Occidental petroleum:**

- Install and maintain systems. Wrote system level programs.