

Charles Sizer IV

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Summary

Multidisciplinary. Mathematician. Engineer. Programmer. Manager.

Objective: Advance my career in a position that lets me emphasize data driven problem solving.

Charles's career has focused on transitioning products with unique processing challenges from development into production. Uses iterative, constructive

method to convert raw, proof-of-concept production lines into automated systems integrated with higher levels of business planning and tracking. Strong track record of troubleshooting enabled by deep understanding of fluid processes, electrical systems and software. Solves complex problems using proven data driven approaches, building models to evaluate steady-state and transient phenomena. My favorite tasks are ones that I can teach a computer to do for me.

Experience

Dairyvative Technologies

REEDSBURG & SHEBOYGAN, WI

Director of Technology

2015- Nov 2018

Worked on the design, installation, validation and commissioning of a new low-acid canned food manufacturing facility. The process was the first process ever approved by FDA using an enzymatic process for a low-acid food. Designed and programmed an automatic control system that was compliant with 21CFR11 for a registered FDA, Grade "A" dairy in Wisconsin.

- Key management
 - Participated in strategic decision making
 - Hired and managed production team
 - Trained and developed employees
 - Drove production efficiency
 - Managed production budget
- Developed new technology for milk preservation
 - High viscosity created handling challenges
 - Unique thermal treatment required detail oriented approach to regulatory approval
- Developed thermal process and handling requirements
- Developed specification for automated controls
- Developed specifications for and designed food grade facility
- Oversaw installation, qualification and commissioning
- Wiring
 - Physically executed all additions to original electrical layout
 - Designed all electrical extensions
 - Implemented traditional control loops, field bus deployments, and network drops
- Programmed
 - PLCs for systems requiring quick response
 - Switches and routers
 - Supervisory Control and Data Acquisition system (Ignition!)
 - * Macro control logic
 - * Operator interface
 - * Regulatory compliant storage
 - * Business system integration
 - * Custom package serialization and tracking system
- Compliance
 - Led development of Food Safety Plan (including HACCP plan)
 - Oversaw execution of plan and training
 - Passed combined state and federal inspections (WI Grade "A", federal Grade "A", LACF)

Cambrooke Foods (now a division of Ajinomoto)

AYER, MA

Product Development Specialist

2012-2015

Designed, assembled and commissioned food processing lines for a medical foods company. The lines included a hot-fill line for high-acid beverages and an AlfaLaval low-acid processing line for packaging medical foods on an aseptic Tetra Pak TPA/19. Member of the team that assembled and implemented the HACCP plan. Medical foods are considered the highest risk food category by the FDA since the patients are required to adhere to a strict diet consisting of only medical foods. As such, the facility was

the first facility inspected under the Food Safety Modernization Act and passed the inspection with no adverse findings.

Accomplishments

- Formulated medical food product meeting guidelines for enteric nutrition
- Iterated design of equipment and thermal process to deliver enteric nutrition
- Formulated a protein enhanced rehydration beverage
- Designed process to gently sterilize protein and maximize shelf-life
- Managed small beverage production team

Pilot Aseptic

St. Charles, IL

Technician

June 2010 - 2012

- Tested effects of various thermal processes on clients' product formulations.
 - Implemented necessary equipment modifications
 - Maintained equipment and facility.
 - Extensive on-the-fly trouble shooting of Alfa Laval VTIS & FLEX systems
 - Created numerical heat-penetration model used by Pepsi Co. through present day
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Education

Illinois Institute of Technology

CHICAGO, IL

Studied Applied Mathematics

2004 - 2007

Focused on discrete methods

Skills

Technical specialties: Python programming, familiarity with SQL/ZPL/LaTeX. Ignition SCADA platform. Data analysis in JupyterLab using Numpy, Scipy and Pandas.

Interests

Non-exhaustive and in alphabetical order: cooking, computer security, hiking, kayaking, machine learning, rocket science, space exploration, sustainability