Curtis Ruder

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Summary

Software Product Owner and Development

- Product owner and lead developer for commercially licensed desktop application *PRISM*™
- Set software strategy, vision, sales, and marketing objectives
- Lead developer accomplishing a code base conversion from VB6 to VB.Net, database migration from MS Access to SQLite, and nearly 80% runtime reduction in critical application functionality
- Coordinate all new and existing client facing activities from sales and product demonstrations through troubleshooting and software packaging
- Automated software data generation process using LP techniques, API calls, browser automation, and HTML parsing which resulted nearly 200 man-hour per month reduction

Refinery Optimization and Product Planning

- Apply machine learning techniques to optimize complex and profitable industrial processes
- Experience using LP techniques to optimize refinery operations and blending activities
- Coordinated gasoline and distillate blending activities for major U.S. Gulf Coast refinery
- Developed and integrated LP yields for four conversion units and five hydrotreaters
- Calibrate and maintain refinery process models for all 125 active U.S. refineries leveraging nearly 25,000 publicly available data points per quarter
- Interface with stakeholders to interpret results and bolster data driven decisions

Process Engineering and Equipment Strategy

- Experience using Aspen HYSYS and other process simulation technologies to develop, maintain, and optimize steady-state process unit models
- Direct support experience for crude units, FCC, and cumene fixed bed alkylation unit
- Familiarity with operational objectives and limitations of nearly all fuels units
- Experience with process equipment sizing for heat exchangers and distillation trays
- Integrated OSIsoft PI and LIMS data to monitor system health and drive business decisions

Experience

Imubit — Houston, TX — 2022 – current

Senior Process Optimization Engineer — **2022 - current**

- Applying machine learning technology to continuously optimize live manufacturing processes
- Define process optimization strategies in collaboration with internal and client economic teams
- Interact with clients to incorporate feedback and better apply machine learning techniques

Baker & O'Brien — Houston, TX — 2017 – 2022

Software Product Manager — **2020 - 2022**

- Product manager for commercial desktop application *PRISM*™
- Set software strategy, vision, and marketing objectives
- Interface directly with clients and business leaders to understand objectives and needs
- Develop and audit internal metrics for software quality and calibration productivity

Engineering Consultant — **2019 - 2022**

- Worked on multiple client projects leveraging experience and technical capabilities to delivery high quality work on time and on budget
- Leveraged self-developed LP framework on multiple 6 figure assignments
- Conducted market analysis on nearly all refining centers in the U.S.
- Developed IMO2020 predictive model and presented results at COQA industry conference

Software Developer — **2018 - 2022**

- Lead developer on 85,000 line code base conversion from VB6 to VB.Net
- Migrated database backend from 32-bit Microsoft Access to SQLite
- Optimized runtime issues resulting in a nearly 80% runtime reduction

- Data entry automation using browser automation, API end points, and direct HTTP requests
- Created LP framework which reduces the development time and complexity for LP studies

Refinery Modeling Specialist **2017 - 2022**

- Maintain and improve refinery process models for all 125 U.S. refineries
- Parse nearly 25,000 data points per quarter to create industry look back
- Interface with software subscribers to share industry insights
- Leveraged automation and LP framework to eliminate 200 man-hours per month

Flint Hills Resources — Corpus Christi, TX — 2012 - 2017

E&P Product Planner **2016 - 2017**

- Executed weekly LP studies to determine buy / sell plans for gasoline blending intermediates, calibrate gasoline recipes, and drive economic decision making for project support
- Identified and remediated historically unoptimized gasoline opportunity worth $12MM / yr
- Championed RBOB terminal specification change worth $3.5MM / yr
- Led project justification effort for $5.0MM / yr blending debottlenecking project
- Overhauled Gasoline LP model improving accuracy and profitability
- Created and automated blending metrics and lookback process
- Temporary distillate planner coordinating all jet and diesel blending activities

E&P LP Model Development **2015 - 2016**

- Responsible for improving existing LP accuracy. Improved representation of unit constraints, validated and updated flow routing flexibility, and calibrated yield profiles
- Created tools and statistical approach for integrating site OSIsoft PI and lab data (LIMS)
- Used multivariant regression analysis to develop and implement unit vectors for five hydrotreaters, two FCCs, coker, naphtha reformer, and hydrocracker units
- Coordinated blend study which improved non-linear blending interactions of gasoline blendstocks which reduced deviation between predicted and actual by more than 2x

Strategy Reliability Engineer **2013 - 2015**

- Owned equipment strategy for FCC, HF alky, cumene, and coker units
- Executed root cause failure analysis (RCFA) and resolved failure modes
- Developed work scope and strategy for cumene unit turnaround
- Created and delivered company-wide training sessions on Weibull and predictive models

Process Engineer **2012 - 2013**

- Aspen HYSYS site lead for process unit modeling
- Supported FCC and fixed bed alkylation
- Mentored four process engineers as temporary team lead
- Created unit monitoring tools, automated monthly reports, and created visualization template for unit monitoring that became base expectation for all process engineers
- Championed emissions reduction effort via FCC fullburn transition. Resulting documentation and justification methodology was referenced as best practice for future operational studies

NCRA Refinery (CHS Inc) — McPherson, KS — 2009 - 2012

Process Engineer **2009 - 2012**

- Supported refinery crude and light ends units
- Lead overnight Process Engineer on major refinery turnaround
- Owned turnaround exchanger cleaning strategy

Skills

Aspen HYSYS	Aspen PIMS	C++	C#	CSS
Git	HTML	HTTP	Java	Javascript
JSON	MS Office	SASS / SCSS	SQL	Subversion
VB.Net	VBA	Visual Studio	VS Code	XML

Education

Fort Hays State University	**B.S. Computer Science (4.0 / 4.0)**	2020 - 2022
Texas A&M – Corpus Christi	**MBA Finance Concentration (3.9 / 4.0)**	2016 - 2019
Kansas State University	**B.S. Chemical Engineering (3.6 / 4.0)**	2004 - 2009