



Beta Presentation

Insurance Quoting Assistant

The Capstone Experience

Team Delta Dental IQA

Raduan Moustafhim

Patrick Oleksik

Ronnit Chopra

Nam Nguyen

Hunter Haack

Charles Selipsky

Department of Computer Science and Engineering

Michigan State University

Fall 2025



*From Students...
...to Professionals*

Project Overview

- Manual data entry is tedious and time consuming
- Data is gathered across various mediums
- Our goal is to automate process through AI
- Allows for efficient and accurate quote generation



Team Member's Technical Tasks

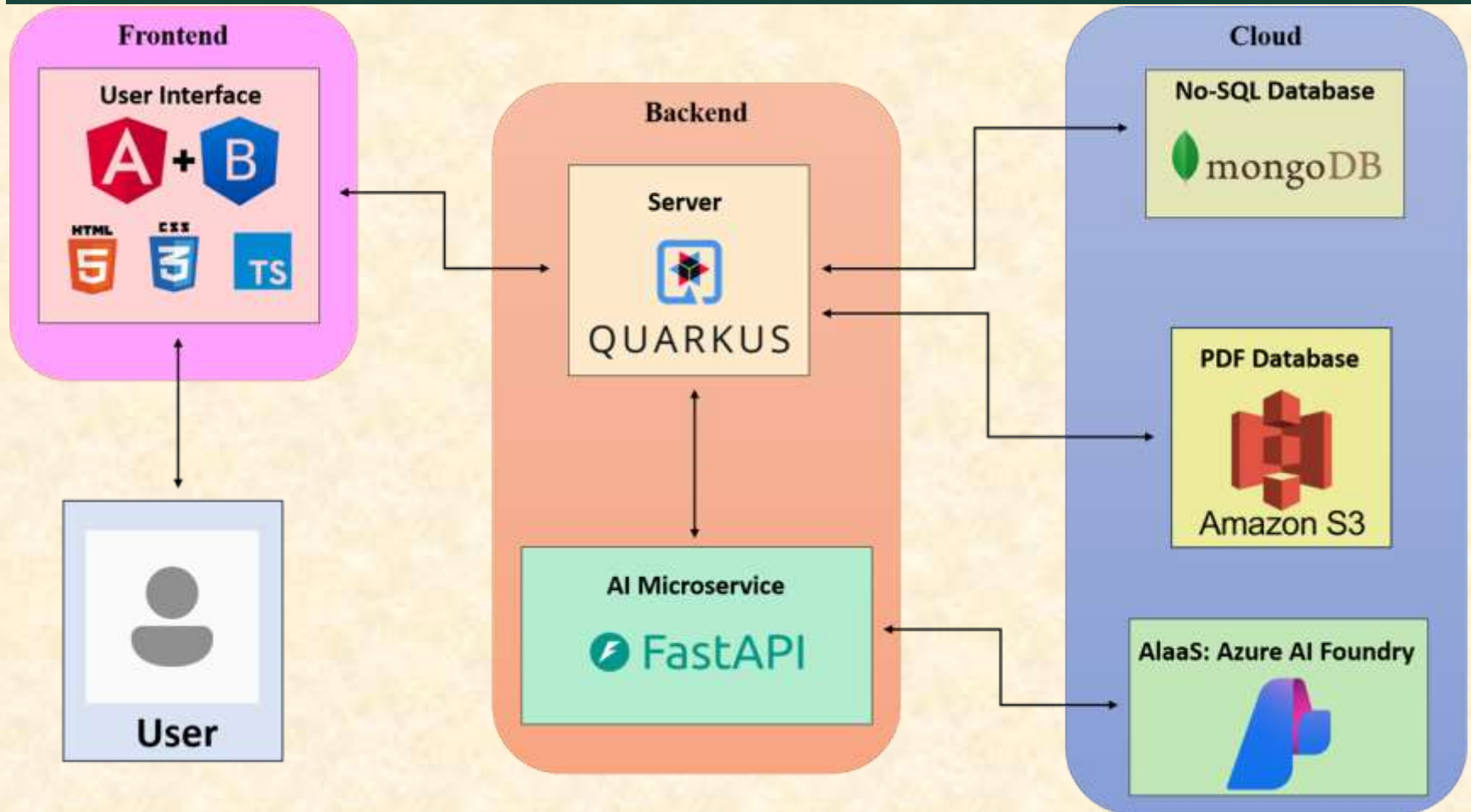
Technical Tasks Assigned

- Raduan Moustafhim
 - Implemented Review Quote functionality
 - Implemented Review and Compare Proposals functionality
 - Implemented Generate Proposal functionality
- Patrick Oleksik
 - Added parsing for docx, xlsx, xls, and csv file types
 - Created the processing and merging for census types
 - Created the ZIP to County lookup using Azure Maps API
- Ronnit Chopra
 - Designed JSON schema and architecture for reliable metadata
 - Built multiple RESTful endpoints for robust CRUD operations
 - Developed PDF generation stack and AWS S3 integration
- Nam Nguyen
 - Async file uploading and quote processing
 - Proposals locking functionality
 - Progress saving at any point during information review
- Hunter Haack
 - Created Quarkus endpoints
 - Created PDF functionality to print and save PDFs
 - Added more functionality to information pulled from front end
- Charles Selipsky
 - Built out FastAPI microservice overall structure
 - Implemented benefit/group LLM processing
 - Lead approach for new schema, retaining accuracy and achieving consistency with sponsor desired format

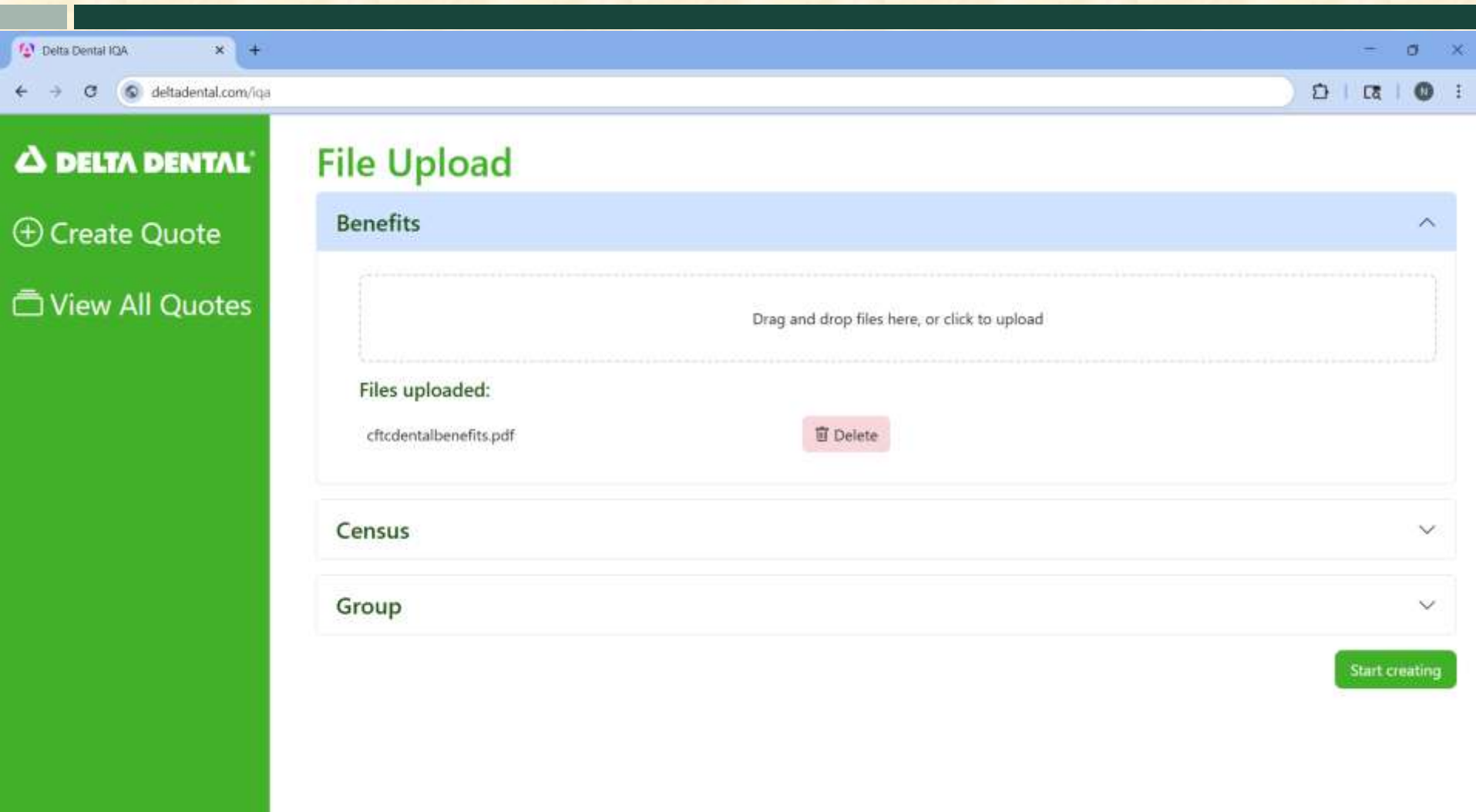
Technical Tasks Completed

- Raduan Moustafhim
 - Implemented Review Quote functionality
 - Implemented Review and Compare Proposals functionality
 - Implemented Generate Proposal functionality
- Patrick Oleksik
 - Added parsing for docx, xlsx, xls, and csv file types
 - Created the processing and merging for census types
 - Created the ZIP to County lookup using Azure Maps API
- Ronnit Chopra
 - Designed JSON schema and architecture for reliable metadata
 - Built multiple RESTful endpoints for robust CRUD operations
 - Developed PDF generation stack and AWS S3 integration
- Nam Nguyen
 - Async file uploading and quote processing
 - Proposals locking functionality
 - Progress saving at any point during information review
- Hunter Haack
 - Created Quarkus endpoints
 - Created PDF functionality to print and save PDFs
 - Added more functionality to information pulled from front end
- Charles Selipsky
 - Built out FastAPI microservice overall structure
 - Implemented benefit/group LLM processing
 - Lead approach for new schema, retaining accuracy and achieving consistency with sponsor desired format

System Architecture



File Upload



Review Quote Information

DELTA DENTAL

+ Create Quote

View All Quotes

Review Quote

Basic Info Group **Census**

Expected Enrolled: 2

Tally Sum Totals To: 20

Total Eligible*: 0

Census Distributions

Tallies

SUBSCRIBERS

0-24	25-34	35-44	45-54	55-64	65+	Total
2	0	3	0	0	0	5

Type: SUBSCRIBERS

SPOUSE

Review Proposals

The screenshot shows a web browser window with the URL `deltadental.com/iqa`. The page title is "Review Proposal". On the left is a green sidebar with the Delta Dental logo and two links: "Create Quote" and "View All Quotes". The main content area has a header "Review Proposal" and a sub-header "Proposal 1 x Proposal 2 x +". Below this is a button "Compare Proposals". The form contains several input fields and sections:

- Dental Tied To Medical**: Input field with value "False".
- Employee Opt Out**: Input field with value "False".
- Employer Contribution Dep***: Input field with value "100".
- Employer Contribution Emp**: Input field with value "98".
- Last Update Date**: Input field with value "10/07/2025" and a calendar icon.
- Notes**: Input field with value "Needs review later".
- Participation Type***: Input field with value "Employer Paid".
- Proposal Number***: Input field with value "Enter proposal number".
- Tiered Rates***: Input field with value "Enter tiered rates".
- Rating Discount***: Input field with value "Enter rating discount".
- Uri***: Input field with value "Enter uri".
- Is Current Plan***: Input field with value "Enter is current plan".
- Benefit Plan***: A large yellow input field with a dropdown arrow.

At the bottom left is a "Back" button. At the bottom right are "Save" and "Generate Proposal" buttons. A small disclaimer at the bottom left reads: "*This information was gathered by Insurance Quoting Assistant".

Compare Proposals

The screenshot shows a web browser window with the URL `deltadental.com/iqa`. The page has a green sidebar on the left with the Delta Dental logo and two buttons: "Create Quote" and "View All Quotes". The main content area is titled "Compare Proposals" and includes a section "Select Proposals to Compare" with two input fields labeled "Proposal 1" and "Proposal 2". Below this, a paragraph of text compares two proposals, noting similarities in benefit design and differences in employer contributions, deductibles, and orthodontic coverage. Another paragraph provides advice on how to choose between the two proposals based on priorities like employer contribution and dependent funding. At the bottom, there are two expandable sections: "Deductible And Maximums" and "Other Unique Features And Contributions", both marked with a yellow "1" icon. The "Deductible And Maximums" section is currently expanded, showing a comparison of deductibles and annual maximums for Proposal 1 and Proposal 2.

DELTA DENTAL

Create Quote

View All Quotes

Compare Proposals

Select Proposals to Compare

Proposal 1

Proposal 2

Both proposals share nearly identical benefit design for service coinsurance tiers, procedure-level coinsurance, preventive frequencies and the \$50 single deductible. The material differences are in employer contribution levels and employee opt-out, small differences in family deductibles and annual maximums, whether preventive is excluded from the annual maximum, orthodontic coverage flags, inclusion of a rollover maximum, and an EHB flag; Proposal 1 is more generous on employer contribution and dependent funding while Proposal 2 shows administrative/design differences (dental tied to medical, EHB, rollover included) and slightly lower family maximums.

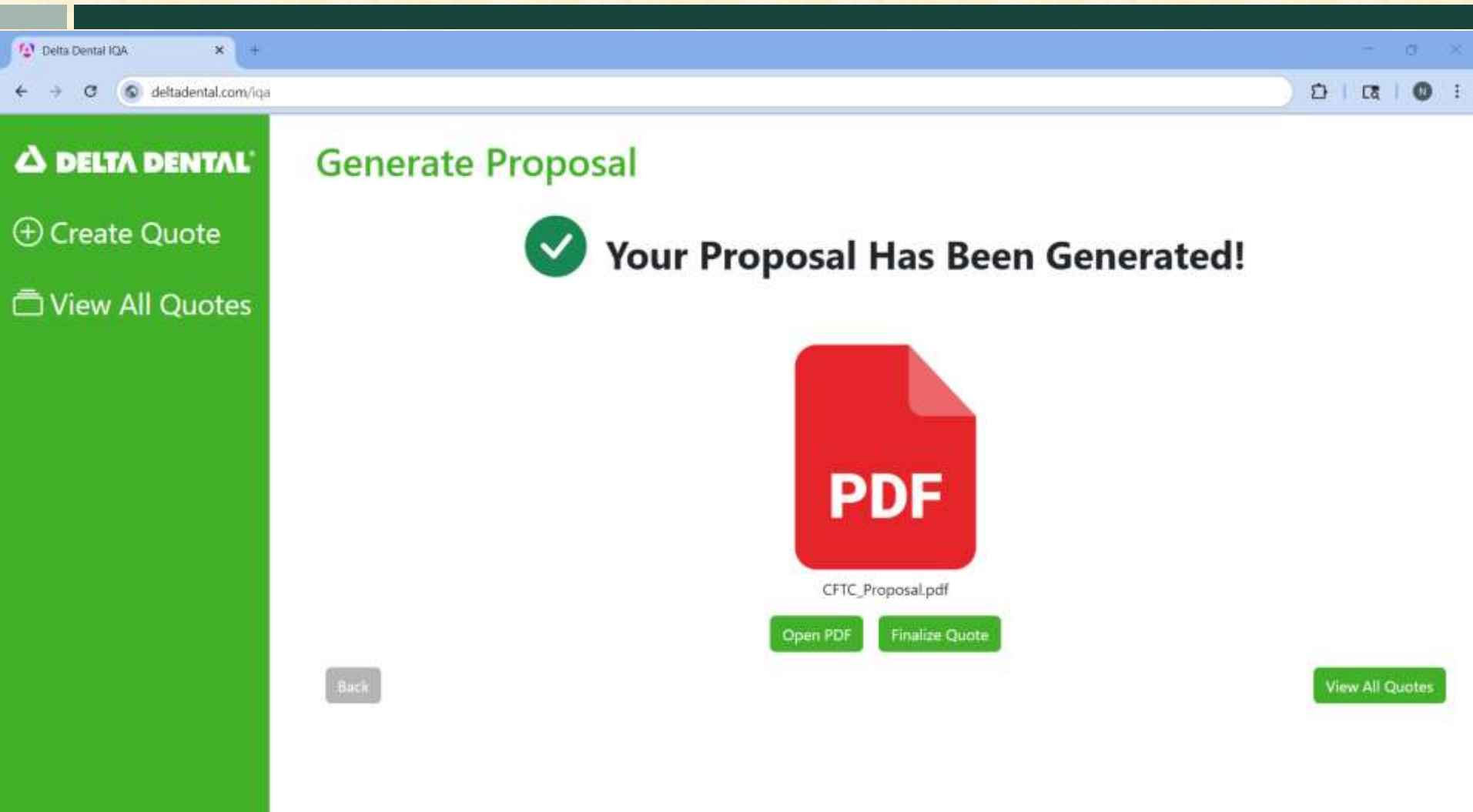
If employer contribution level and higher dependent funding are the priority, favor Proposal 1. If features such as rollover maximum inclusion and EHB alignment are required, Proposal 2 may be preferred — but confirm the apparent contradictions before selecting (Proposal 2 lists ortho coinsurance and an ortho maximum but has `orthoCovered=false`). Also confirm whether Diagnostic & Preventive amounts count toward the annual maximum (Proposal 2 marks those as excluded) and clarify the employer's intended employee opt-out and dental tied-to-medical settings.

Deductible And Maximums

Both plans share a \$50 single deductible, but family deductible and annual maximums differ slightly (Proposal 1: family \$150 / general max \$3,000; Proposal 2: family \$126 / general max \$2,965). Proposal 2 also marks Diagnostic & Preventive as excluded from the annual maximum while Proposal 1 does not. The top-level orthodontic deductible flag also differs (Proposal 1 = true, Proposal 2 = false), which affects whether orthodontia is subject to a deductible if provided.

Other Unique Features And Contributions

Quote Generation



View All Quotes

Delta Dental IQA

deltadental.com/iqa

DELTA DENTAL

Create Quote

View All Quotes

All Quotes

Search by quote name

Status: All

Quote Name	Last Modified	Status	
CFTC_3	10/31/25, 11:57 AM	Completed	View Edit Download Delete
CFTC_1	10/31/25, 11:51 AM	Needs Review	View Edit Download Delete
Quote_11	10/31/25, 10:53 AM	Needs Review	View Edit Download Delete
Quote_10	10/31/25, 10:36 AM	Needs Review	View Edit Download Delete
CFTC_2	10/31/25, 10:23 AM	Needs Review	View Edit Download Delete
Quote_9	10/31/25, 4:14 AM	Needs Review	View Edit Download Delete
Quote_8	10/30/25, 6:27 PM	Needs Review	View Edit Download Delete
Quote_7	10/30/25, 6:16 PM	Needs Review	View Edit Download Delete
Quote_6	10/30/25, 2:48 PM	Needs Review	View Edit Download Delete

Previous 1 2 Next

What's left to do?

- Features
- Stretch Goals
 - LLM model benchmarking
- Other Tasks
 - Finalizing generated PDF format
 - Caching Azure Maps results



Questions?

?

?

?

?

?

?

?

?

?

