Hello Darin, thank you for taking the time to answer these questions.

I'm conducting research on behalf of a Dr. Anh D. Chau’s research team. Our project aims to explore how AI could be developed to assist professionals in the construction industry. We're specifically looking at how these applications could help with day-to-day tasks. There are no right or wrong answers – we're interested in your honest thoughts and experiences. Your expertise in the field is what we're here to learn from.

**1. Background Questions**

* Could you briefly describe your role in the construction industry?

As a Project Manager in the construction industry my role is complete management of various projects. The includes, but is not always limited to the following:

* How long have you been working in this field?

32 years and counting

* What are the main types of projects you typically work on?

Heavy Civil / Infrastructure:

Roadway – Improvements to existing and construction of new

Underground Utility (new installations and replacement of aging facilities)

Storm water management

Earthwork – excavations, embankment / grade

Water and Wastewater Treatment – Plants and Pump Stations

Bridge Work - Integral Abutment and Girder, Beam

Lock and Dam

Mine Reclamation

**2. Current Challenges and Processes**

* Could you walk me through a typical day in your role, focusing on tasks that involve accessing information, decision-making, or following specific processes?
  + **Item 1** – catch up on emails from previous end of day or from over the weekend and address anything outstanding, urgent, or that has a time constraint
  + **Item 2** – Talk with superintendents on each active project about plan for the day, issues that need to be resolved, or assistance they may need form me
  + **Item 3** – Review and approve reports in Build 2 Win for jobs assigned to me
  + **Items 4** – P-Vault – review invoices submitted for jobs assigned to me, address any issues with submitted invoices and then approve or reject in the system.
  + **Item 5** - Box – address Tasks assigned by Crystal / April
  + **Item 6** – Prep for scheduled meetings, calls and other planned activities that are on my calendar.
  + **Item 7** – If paving operations are on my projects: Collect the roadway reports and review for tons placed and any deficiencies. Check for tons listed as waste and follow-up if the waste amounts seem high – find out why, Review the OC logs for the shift and compare to the field logs for the crews, Update the Haul and Install report with the current information, check SOP for trucking and cross check asphalt loads / tickets for both Ajax trucks and Broker trucks
  + **Item 1 through 7 are my intended process each morning**. Monday can be a little more intense due to the weekend and getting everyone back up and running especially if paving crews worked on Sunday night. From there, I take is as it comes because we never know what the next email or phone call will bring.
  + **Time sensitive items are always addressed first**
  + Plan the work and work the plan as best I can. It can be crazy at times especially when I have multiple projects working at the same time.
* What are the most challenging or time-consuming aspects of your daily work? How do you handle them? (Follow-up: How do you think AI might help with these challenges?)
  + Currently, Monthly FDOT Pay Estimate time is the most time consuming. There are a host of items that have to gathered and compiled for submittal to the CEI each month so that the pay estimate is submitted on time and with all the required information for processing. It this is missed, we don’t get paid. If we don’t get paid, subs and suppliers don’t get paid and it can snow ball out of control.
  + In this case, I am not sure AI could help. The estimate process requires gathering items, signatures and information from people to compile into the correct submittal format for processing. There isn’t much that AI can search for that is of benefit for the estimate process. Most of the information needed is provided by different individuals that all have a separate set of action items associated. Because AI cannot perform the actions needed, we need people to do those tasks.
  + Other more time-consuming aspects are project meetings. They can be frustrating especially when they get off the agenda and turn into long discussions that are not always needed. Meetings should have a purpose and be structured, not an open forum for various discussion points.
* Are there any repetitive tasks in your work that you find particularly tedious? Can you describe one in detail? (Follow-up: How much time do you estimate you spend on this task?)

Particular to FDOT projects that have Federal Funding, there is a lot of paperwork involved. There are a host of requirements when Federal Funding is part of a project from various EEO (Equal Employment Opportunity) which require certain wage rates be paid to all employees that are working on a project. That includes those who work directly for Ajax paving as well as those who work for any subcontractors. This requires a host of documentation to be coordinated between Ajax paving, subcontractors, Inspectors, FDOT and so on.

With each new subcontractor added to a project, a subcontract agreement must be in place, a Sublet issued to FDOT for approval, insurance verified, safety plans submitted, current business license on file, certified payroll for all employees that work on the project submitted regularly, a Job Site Bulletin Board installed on the project with all current Federal Laws posted (the JSBB is regularly updated, inspected and verified). In addition, projects that reach certain thresholds in terms of dollar value and contract length could require On The Job Training (OJT) as a requirement for the use of Federal Funds. With that requirement in place, such as on the T1863 contract, there are certain number of trainees required to work on the project in one of the dedicated trainee capacities. When there is a trainee on the project, hours worked are documented and signed off by the inspectors. Hours worked are accumulated over the course of the project in order for the trainee to “graduate” and be certified in various capacities.

In essence, FDOT contracts and those that have Federal Funding add a considerable amount of work beyond simply managing the construction. Depending on the scope, size and amount of Federal Funding involved, this effort can be cumbersome and intense on a regular basis so that we remain in compliance and can bill for work completed in a timely manner.

* In your area of work, what are some common issues or mistakes that people often encounter? How are these typically addressed? Is there any possibility that they cannot be discovered and resolved timely?
  + Plan errors. This can lead to RFIs, cost increases and delays to the project. Reviewing the plans for consistency and constructability early in the project can help mitigate these potential problems. One has to study the project plans and understand the scope / intent of the project. In addition to the plans, the details, standards, specifications and owner’s expectations are also important.
  + Another aspect where mistakes can happen is in poor project planning and communication. This goes back to understanding the project and various scopes within the project. Proper coordination of work activities, subcontractors, vendors, suppliers, etc. are essential to performance. As an example, if the lead time of a component of the work is such that it will impact several other scopes, that lead time needs to be considered. Not having a critical component needed for the project can delay several scopes and jeopardize the outcome of a project which can lead to re-work, added time, added cost and change orders.
* If you encounter any problems, do you have any online source that you use to trouble shoot it? If so, what do you use? Any social media like Reddit, YouTube etc.?
  + Depends of the problem. Typically, I tend to reach to others in our field for input. Building a solid network over the course of a career is essential. Good relationships with other contractors, subcontractors, suppliers, vendors, engineers, inspectors, testing technicians and owners can provide resources needed to address unique problems and challenges that may come up. That said, I prefer using my network. If those I reach to for assistance, opinion or guidance can’t help, they might know someone who can. I suppose this could lead to the use of various sources like social media, but I personally don’t rely on those options as much as I rely on making a phone call, or sending an email.
  + The project team assigned is also important. The selection of the right project team (PM, Superintendent, Project Engineer, Project Coordinator) can benefit the project and could also hurt the project. PMs and Supers should rely on each other to build a project. All projects are a team effort. Not one person alone is the driving force that makes a project successful.
* How do you currently handle tasks that require looking up information from company documents, industry standards, or databases? (Follow-up: What challenges do you face in this process?)
  + Most of the items we need to look up are either in the contract documents, plans, details, specifications or manuals. In some cases, AI is beneficial such as when searching specifications for various requirements. However, we do need to be careful and not take anything AI provides as “gospel” if you will. AI is following a command so the result is only as good as the command it was given.
  + I think knowing what it is you are looking for and where that information is, or might be, is the first step. With that, Ajax has several people within the organization that we can reach out to for assistance. This is a team effort so asking or help is valuable and I think expected when needed.
* Can you describe any routine analysis or decision-making processes you perform regularly in your work? (Follow-up: How do you ensure accuracy or consistency in these processes?)
  + Change Orders and Cost Proposals – when the work or the scope of a project change, that results in changes to cost, schedule and other factors. We have to start by understanding the original or intended scope of work to know if the work changed. If the work did change, then we need to understand what changed. Do we have added work or effort? Do we have reduced work or effort? Was the work part of a subcontractor’s scope? Why did the work change and who changed it?
  + Once we understand what the change is, we can then look at how that change will impact cost and time. From there we can decide on the best means to handle the change.
* How do you stay updated with changes in industry practices, regulations, or company policies? What challenges does this present?
  + Trade shows
  + Events
  + Emails
  + Social Media
  + Industries Publications
  + Refresher Training
  + Collaboration with colleagues around the country
* Can you think of any aspects of your work where even small improvements in efficiency or accuracy could lead to significant time or cost savings?
  + Based on how Ajax does things, it can be frustrating when information is found in a host of locations. Ajax uses several software applications for different aspects of work. From P-Vault, Box, SOP, Build 2 Win, Bid 2 Win, Viewpoint, excel spreadsheets, etc. It can be cumbersome to go to different applications to gather data needed to generate a report, complete a pay estimate, generate a change order, document a project condition, etc. when information is spread across different platforms, it can be time consuming to gather all of it for review to see how a project is performing as compared to the original bid assumptions.
  + Generally, FDOT projects tend have so many requirements, reports, documents, conditions, and so on, that they are very inefficient in my opinion. However,

**3. AI Awareness and Potential Applications**

* Are you familiar with AI or chatbot technologies? If so, how have you encountered them in your work or personal life?

Yes. I have taken time to explore and try out the capabilities.

* + Have you or your company used any AI tools in your work? If yes, could you describe that experience?

Yes. I would say it is interesting and powerful. However, I would also say we need to exercise caution. In my opinion, AI can certainly be a benefit, but we need to make sure what AI is providing is accurate. I don’t think it is wise to assume that the information provided by AI is perfect. I do think the use of AI will increase and develop. There will be benefits for various aspects of our work and will be a great tool to have at our disposal.

* In what areas of your work do you think AI could be most helpful?

Searching specifications to develop submittal registers and submittal requirements

Searching contract documents for various items

Summarizing long complex documents for clear communication needs

Searching emails for key words and conversations

Analyzing data to develop trends and identify areas where we are the most efficient as well as the most inefficient.

* What concerns, if any, do you have about using AI in your industry?
  + Using it and taking the results as 100% accurate and truth without review.
  + While AI is powerful and it can do many things, I think it is taking the personal touch and style out of many things. AI can mimic people, but it can’t ever be a person.
  + With younger generations coming into the industry, I wonder if the use of AI will provide a false sense of ability and skill that is traditionally learned over time.

**5. Closing Thoughts**

* Based on our discussion, how do you envision AI potentially changing your work in the future?

I see AI becoming more and more normal in everyday use. I am certain we will see AI integrated into all the various software platforms that are available. We will likely see AI being used to review all the different ways agencies and owners administer projects to develop a single and consistent project delivery tool that will become an industry standard.

* Do you have any other thoughts or suggestions about integrating AI into the construction industry?

Procced with caution. AI can’t do everything. I think the people aspect of construction will never be replaced. There is too much that we do in our day to day for AI to address all the human interactions in a construction project. I find it hard to believe that AI will be able to think outside the box and develop a novel idea or approach to problem solving. I could be wrong.