Internship Report

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Introduction

This Internship Report details my experience at Constructor Technology during my tenure as a Product/Data Intern within the Product team. The report covers various aspects of my internship, starting with the initial application steps and my approach in securing this internship and the motivations driving my decision to choose this specific internship. The report also describes how my academic courses at Constructor University influenced my decision to go with the internship, details of the organization I worked for, the specifics of my role within the company, the relevance of my major in Data Science as well as my daily, weekly, and monthly tasks.

Subsequently, the report also addresses some of the challenges I encountered during the internship, the strategies I employed to overcome them, and the role of advice and communication in problem-solving. Last but not the least, I also give an insight into the work environment at Constructor Tech, the company's culture, colleagues' visions and goals, and the dynamics of relationships with colleagues and supervisors before concluding with my evaluation of internship and the learning outcomes as well as its influence on my personal and professional growth.

Application Steps

The approach to finding this internship began much earlier, as far back as my first semester in September 2022 when I attended some general professional networking events. One of these events was from the J-CUB Startup networking community at Constructor University. Through the events, I signed up for a Telegram channel that occasionally disseminated information about startup pitch and networking events as well as internship opportunities. In

June 2023, I came across a post in the Telegram channel that advertised this position at Constructor Tech. I reached out to the poster, who was the HR manager at Constructor Tech. Through some message exchanges that we exchanged, I was able to understand the scope, roles and responsibilities that this internship would entail as well as an overview of the organization.

Through my conversations with the HR, I came to realize that this internship role would be one where I could bring my previous work experience, interests in product and data and apply my learnings from my course to work. I gained more clarity about the role, how I could add value to the organization and how it aligned with my future career goals through subsequent interviews with the Senior Product Manager, Senior Director of Product Management and the Chief Technology Officer at Constructor Tech. I became especially aware of how some of the courses that I had taken at Constructor University such as MDSSB-DSOC-01, Digital Societies and Future Economies, MDE-CAR-01 Communication and Presentation Skills for Executives, MDSSB-DTRANS-02 Digital Business Models and Functions and MDSSB-DSAI-01 Digital Transformation of Organizations were helpful in swaying my decision. These courses taught me about how modern businesses and organizations adopt data-driven practices and innovative business models to create products and services that add value to users or society in general. The course on communication and presentation also provided me with key tools, tips and best practices as well as confidence in being able to discuss and present important ideas to peers, managers and stakeholders in an organization. The courses on Digital Business Models and Functions and Digital Transformation of Organizations prepared me to understand how an organization like Constructor adopts modern methodologies for product development and innovative business models to monetize these products. All of these courses were important

factors in my decision to go for the opportunity at Constructor Tech. I was able to complete the interview process in a week and was successful in joining in the second week of July 2023.

The organization: Constructor Technology

The decision to do the internship with Constructor Tech was influenced by a number of factors. First and foremost, I relished the opportunity to work for a technology company with a noble mission of providing effective learning solutions in the education sector. Constructor Tech is a technology company that develops an education and research platform covering the whole lifecycle for K12, higher education, corporate training and scientific research. The organization employs machine intelligence and data science, to offer solutions in teaching, administration, learning and research catering to the needs of schools, higher education, corporate training and more. It is part of the Constructor Group, a global institution founded in 2019 by tech & education entrepreneur and investor Dr. Serg Bell.

The products developed by Constructor Tech include an all-in-one Learning Platform, Avatar (an AI-based Video generation tool for education), Proctor (AI-based proctoring solution), Coding Lab (a code-centric, developer-friendly lab) , Virtual Lab (an integrated hands-on learning environment for software training), Classroom (a virtual classroom software), Graphari (a learning system to help children master spelling) and Calcularis (a system that helps children learn the fundamentals of mathematics).

The customers who use the platforms and solutions developed by Constructor Tech include leading cybersecurity firm Acronis, educational organizations like Constructor University and Politecnico di Milano, cloud solutions provider Virtuozzo and even sports organizations like the football clubs Inter Milan and AFC Ajax Amsterdam.

The company has over 376 employees and operates in a highly competitive environment, with products such as Cornerstone LMS, iSpring Learn, Learning bank, Haufe Learning Management and TalentLMS among others.

The internship position: Product/Data intern

During my internship at Constructor Tech, I held the position of a Product/Data Intern within the Product team. The team I was assigned to was responsible for developing and improving the LMS product that was being used by prestigious institutions such as Constructor University Bremen and prominent cybersecurity firm Acronis, among others.

As a Master's Data Science student, my internship experience at Constructor Tech was highly relevant to my major. The tasks and responsibilities I undertook closely aligned with the core principles of digital transformation, digital business models as well as data analysis and visualization, which are fundamental to the field of Data Science. I had the opportunity to apply the knowledge and skills I had acquired throughout my academic studies to real-world scenarios, gaining practical experience in product development, design thinking, data analysis, interpretation, and visualization. I was also able to apply statistical techniques, data mining, and machine learning concepts to analyze user data and create meaningful insights. Additionally, my coursework in data visualization allowed me to effectively communicate findings through the creation of data dashboards for teachers and instructors. This fusion of academic knowledge and practical application greatly enhanced my ability to contribute to the Product team's goals.

While my primary focus was within the Product team, I collaborated with various departments to achieve a comprehensive understanding of the company's operations. My daily tasks involved:

- Understanding customer requirements

A foundational aspect of my internship was the in-depth analysis and interpretation of customer requirements, particularly those stipulated by Constructor University for their evolving LMS. This involved a meticulous study of the expectations associated with the LMS deployment. These requirements served as a roadmap, guiding the subsequent phases of feature development. A crucial part of this process was the translation of identified requirements into User Stories, providing a tangible and actionable framework for the development team. These User Stories had to clearly communicate the feature to be implemented, context it served within the larger framework of the LMS itself, implementation details and how it would integrate with the rest of the features as well as acceptance scenarios which would eventually be tested by the Quality Assurance team.

- Collaborating with an interdisciplinary team

To translate User Stories into tangible features, collaboration with an interdisciplinary team was imperative. Working closely with Product Managers, Developers (both Front-end and Back-end), Designers, and Quality Assurance (QA) team members, I engaged in a productive exchange of ideas and expertise. This collaborative effort ensured a holistic approach to feature development, encompassing product management principles, design aesthetics, technical feasibility, and user experience considerations.

- Agile project management

The adoption of Agile methodology played a central role in the execution of tasks throughout the internship. The Agile methodology is an adaptive approach that emphasizes flexibility, collaboration, and iterative progress. Unlike traditional linear methods, Agile embraces change as an inherent and expected part of the development process, enabling teams to respond swiftly to evolving requirements and customer feedback.

Imagine constructing a building using traditional methods where the entire structure is designed and planned upfront, and any adjustments are cumbersome and time-consuming. In contrast, Agile is akin to building a structure brick by brick, allowing for adjustments and enhancements at each step. This iterative and incremental model ensures that the end product is not only aligned with the initial vision but also responsive to changing needs and insights along the way.

Agile principles prioritize individuals and interactions, working solutions, and customer collaboration over rigid processes and comprehensive documentation. It encourages cross-functional collaboration among diverse teams, fostering a collective sense of ownership and accountability. Rather than viewing development as a linear process, Agile divides it into small, manageable cycles known as "sprints." Each sprint results in a potentially deliverable product increment, providing continuous value throughout the development lifecycle.

Crucially, Agile empowers teams to respond promptly to shifting priorities and customer preferences. Regular reviews and feedback loops are integral components, ensuring that the end

product is not only functional but also aligns closely with user expectations. This adaptability and responsiveness make Agile particularly well-suited for industries where innovation, rapid development, and customer satisfaction are paramount.

In my internship at Constructor Tech, the adoption of Agile methodology was facilitated through the use of a platform called YouTrack. This tool serves as the digital workspace where Agile principles are followed, allowing our team to efficiently manage and implement user requirements while responding promptly to evolving project dynamics. YouTrack provided a centralized platform for collaborative work, issue tracking, and iterative development. Within this tool, we organized tasks into manageable units called User Stories, each representing a specific piece of functionality or improvement. These User Stories were then systematically moved through various stages, from conception to implementation, in alignment with Agile principles.

It allowed the team to efficiently manage and implement user requirements, responding promptly to evolving project dynamics. The iterative nature of Agile enabled us to deliver incremental improvements, ensuring that the Learning Management System evolved organically to meet the evolving needs of Constructor University and other stakeholders.

As part of my responsibilities, I actively engaged in creating, monitoring, and facilitating the movement of User Stories within the YouTrack platform. This approach ensured a streamlined and iterative development process, facilitating efficient communication and adaptation to evolving project requirements.

- Analyzing data from YouTrack reports

A crucial aspect of my role involved delving into data analysis within the YouTrack platform. I conducted in-depth assessments to evaluate the efficiency of project management, the speed of closing User Stories and tasks, and the overall implementation process. This analysis served as a diagnostic tool, enabling the identification of bottlenecks and areas for improvement in the project lifecycle.

- Data analysis and visualization

Utilizing data wasn't limited to project management; I extended my analytical skills to leverage student activity reports. These reports became the foundation for creating data visualizations and dashboards tailored for teachers and instructors. By distilling complex data sets into visually accessible insights, these tools empowered educators to gauge the efficacy of learning delivery, track student progress, and make informed instructional decisions.

My overarching goal during the internship was to contribute meaningfully to the enhancement of the Constructor LMS app and provide actionable insights through product management, data analysis, communication and collaboration with stakeholders. I aimed to improve the efficacy of learning delivery and project management within the company.

Feedback was an integral part of my internship experience. I received regular feedback from my supervisors and team members, which was invaluable in refining my skills and understanding the dynamics of the industry, the product and processes followed in the

organization. The feedback would include everything from suggestions for the way to implement a feature requested by the university, the correct and simplified was to describe this implementation in a User Story so that all team members would understand what is required, best practices in scheduling meetings with the wider team to discuss these User Stories as well as the right stakeholders to invite for specific discussion meetings. The feedback was constructive and allowed me to continuously improve my work and align it with the company's objectives.

Challenges encountered and solutions devised

During my internship at Constructor Tech, I encountered some challenges and difficulties that tested my problem-solving abilities and adaptability. These challenges spanned various aspects of the internship, including the variety of tools and platforms, adherence to standard operating procedures, and communication within the diverse team.

Constructor Tech employed a wide range of tools and platforms for project management, data analysis, and communication. In addition to YouTrack, which was the primary platform for developing, managing and tracking User Stories, various other tools were also used for different types of communication. For example, Microsoft Outlook was used for important emails and for scheduling meetings, while an open source chat software called Zulip was used for quick internal communications and announcements. Additionally, Zoom was the primary software for video meetings, which were the only kind possible, as the organization had a globally distributed workforce and practiced remote work. A designing and prototyping platform called Figma was the preferred choice for the design team, as it was more convenient to create mockups and to collaborate on edits and improvements in real time.

Adapting to and efficiently using these tools presented a learning curve. To overcome this challenge, I proactively sought guidance from more experienced colleagues and took the initiative to self-learn these tools. I also utilized online resources and tutorials to familiarize myself with their functionalities. I often reached out to my immediate team members and mentors for guidance on tool usage and best practices. The team members were supportive and understanding of my learning process, offering assistance and encouragement.

Constructor Tech had established standard operating procedures (SOPs) for various tasks and processes, which also took me a while to get used to. For example, to discuss work with colleagues, whether it was for daily stand-up calls, one-on-one clarification, or "Grooming sessions" for discussing tasks, features and breaking them down for streamlining implementation, the standard procedure was to check in with the relevant team members by Zulip, then schedule a meeting in Outlook and add a Zoom call to the Outlook meeting via the add-on. Once the Grooming Sessions were conducted, time and resource estimates had to be entered into each User Story in the YouTrack platform as per the discussions. Occasionally, some edits and additions were required in the User Story and this had to be communicated to the designers and attendees of the Grooming Sessions. I carefully followed the established SOPs while always checking with my supervisors and taking their feedback.

Effective communication was essential within the diverse team, especially when dealing with cross-functional teams with members often being geographically distributed. Due to the diversity and distributed nature of the team, members often were more comfortable in their own

native languages. And although English was the medium of communication at the workplace, not everyone spoke it at the same level of fluency and comfort.

I made a conscious effort to improve my communication skills by actively listening, speaking slowly and clearly, while asking clarifying questions that were specific and to the point. I also sought to provide clear and concise updates and summaries of discussion in written text via messaging or emails. To overcome any language or cultural barriers, I used translation tools when necessary and always asked for clarification when unsure. I also sought advice from colleagues with experience in intercultural communication and language proficiency. Colleagues appreciated my efforts to bridge language and cultural gaps, and it contributed to a more inclusive and collaborative work environment. My supervisor and colleagues appreciated my efforts to enhance communication, and it led to smoother collaboration and better outcomes.

After a few weeks of working in this Internship role, I was asked to take on more initiative in running Grooming Sessions on my own, and also to represent the Product team during the company-wide Daily Zoom calls in the morning. I was honored to be asked and took this responsibility with both hands, with much positive feedback coming my way from my supervisor after leading these meetings. I also received some constructive feedback from my supervisor on slowing down during a few occasions when I must have spoken too fast in the meetings, and to start from the basics. The rationale for this was also made clear, as I was informed that not all members present in the call may have the complete picture or context of what that particular call was about, or that they have forgotten the details in between focusing on

other tasks. Taking on board this feedback, I made it a point to be slower, clearer and detailed in the subsequent meetings.

Work Environment

The work environment at Constructor Tech was a significant factor in shaping my overall internship experience. It was characterized by a combination of positive attributes that contributed to a productive and enjoyable atmosphere.

The atmosphere at Constructor Tech was highly collaborative, with colleagues eager to share knowledge and assist one another. There was a strong sense of teamwork and a shared commitment to the company's mission. Working for the company felt like being part of a cohesive unit where each team member's contributions were valued and recognized. I could sense that there was a strong and distinctive company culture centered around collaboration, innovation, and continuous improvement.

The company was process-driven, adhering to agile methodologies for project management. Resources were allocated carefully, ensuring efficient project execution. Working for the company was organized, with clear workflows and defined processes. This approach facilitated effective decision-making and project execution. The company culture emphasized the importance of structured processes to achieve efficiency and quality in product development.

The work environment encouraged a problem-solving mindset. Colleagues prioritized identifying and addressing challenges and bottlenecks to achieve better results. Working for the

company meant that a proactive approach to problem-solving was highly valued, often prioritized over other tasks. Constructor Tech had a culture that promoted a proactive and solutions-oriented mindset, fostering a culture of continuous improvement.

The company also organized internal engagement activities like Book Club and Movie Club, which added a fun and social dimension to the work environment. Being part of these activities provided a sense of belonging and camaraderie among colleagues. These activities were indicative of a company culture that valued not only professional growth but also the well-being and social interactions of its employees.

Evaluation: Final thoughts on my internship experience

My internship experience at Constructor Tech was a valuable opportunity for personal and professional growth. It provided me with insights and learning experiences that significantly contributed to my academic and technical knowledge, as well as my personal development.

During the internship, I had the opportunity to learn and apply Agile methodologies for project management. This experience enhanced my understanding of Agile principles and how they can be effectively implemented in a real-world setting. I developed strong problem-solving skills by regularly addressing challenges and bottlenecks, which were integral to the company's culture. My exposure to product management processes allowed me to gain practical knowledge of how product development and enhancement are carried out in a tech company. And my expertise in data science and new skills developed through my studies at Constructor University helped me excel in the various data-intensive tasks such as analyzing student learning and

activity reports as well as assessing and optimizing efficiency of the implementation of User Stories in the product management workflow.

The internship significantly advanced my technical skills in data analysis and data visualization. I had the chance to work with real data sets, applying the concepts I had learned in my Data Science program to create meaningful insights and visualizations. The hands-on experience in data analysis and visualization complimented my academic knowledge, making it more practical and applicable in real-world scenarios.

A positive aspect of the internship was the supportive and collaborative work environment. Everyone from my supervisor to my colleagues were always willing to help and share knowledge, fostering a sense of teamwork. The emphasis on problem-solving and proactive thinking helped me develop a mindset that prioritizes addressing challenges and finding solutions.

One challenge was the learning curve associated with adapting to the variety of tools and platforms used within the company. While it presented difficulties, it also provided opportunities for skill development. Managing time and balancing multiple tasks, including meeting project deadlines and academic responsibilities, was at times challenging but contributed to improved time management skills.

This internship positively influenced my perspective on future studies and career development. It reaffirmed my passion for data science and its practical applications in the

industry. It also provided clarity on the type of work environment and company culture I thrive in, helping me make informed decisions about my future career path.

As a result of the internship, I feel well-prepared for the future. The combination of technical skills, problem-solving abilities, and knowledge of Agile methodologies has equipped me with valuable assets for my future endeavors. I now have a clearer vision of my career goals and the steps required to achieve them.

Without hesitation, I would recommend this internship to my peers. It offers a rich learning experience in a supportive environment and provides opportunities for personal and professional growth. The exposure to product management, data analysis, and data visualization is particularly valuable for students pursuing careers in data science, product development, or related fields.