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5-1 Journal: Computer Science Trends and Artifact Update

7 April 2024

Journal Entry:

**Significance of Artificial Intelligence and Robotics Trends**

The trends of Artificial Intelligence and Robotics represent pivotal advancements in technology, with each trend holding significant implications for the future of various industries. Artificial Intelligence (AI) empowers machines to mimic human intelligence, revolutionizing processes such as problem-solving, data analysis, and decision-making. Robotics, on the other hand, focuses on constructing autonomous machines that can perform tasks independently.

Darrell and John explain Despite its widespread lack of familiarity, AI is a technology that is transforming every walk of life. It is a wide-ranging tool that enables people to rethink how we integrate information, analyze data, and use the resulting insights to improve decision-making. Our hope through this comprehensive overview is to explain AI to an audience of policymakers, opinion leaders, and interested observers, and demonstrate how AI already is altering the world and raising important questions for society, the economy, and governance.

**Impacts on the Field of Computer Science**

Artificial Intelligence is reshaping the landscape of computer science by driving innovations in machine learning, natural language processing, and computer vision. This trend challenges conventional computational approaches by enabling machines to learn from data independently and adapt to new scenarios. Robotics, on the other hand, integrate AI algorithms into physical systems, leading to advancements in automation, manufacturing, healthcare, and transportation.

**Effects on Consumers, Workers, and Citizens**

The proliferation of AI and Robotics technologies is set to transform the consumer experience, offering personalized services, streamlined processes, and enhanced convenience through smart devices and autonomous systems. However, concerns regarding job displacement, data privacy, and societal disparities may arise as these technologies become more prevalent in society. Alicia and Kayley mentioned that, though this depiction of a robot assistant is fiction, it’s not far from the robots that we see assisting on a different type of frontline: the frontlines of customer service. Robots like Hilton’s “Connie” and Softbank’s “Pepper,” though not quite as advanced, utilize these robots’ abilities in language and navigation to create better guest experiences in hotels, restaurants, and shops.

**Alignment with Career Interests**

For individuals with career aspirations in technology, the convergence of AI and Robotics presents exciting opportunities to drive innovation, address complex challenges, and create solutions that positively impact society. By actively engaging with these trends, one can contribute to cutting-edge projects that push technological boundaries and foster advancements in human-machine interactions.

**Course Outcomes Achieved and Goals Ahead**

Reflecting on academic achievements, a solid understanding of AI and Robotics theories, including algorithms, neural networks, and control systems, has been attained. Moving forward, there is a focus on acquiring practical skills in implementing AI solutions, delving into human-robot interaction dynamics, and navigating the ethical considerations surrounding AI technologies.

Embracing a spirit of continuous learning and curiosity, the journey ahead involves mastering the intricacies of Artificial Intelligence and Robotics to unlock their full potential in addressing real-world challenges and shaping a technologically advanced future.

**Reference**

Robots Are Changing the Face of Customer Service, Alicia A. Grandey and Kayley Morris, March 22, 2023

<https://hbr.org/2023/03/robots-are-changing-the-face-of-customer-service>

How artificial intelligence is transforming the world, Darrell M. West and John R. Allen, April 24, 2018

https://www.brookings.edu/articles/how-artificial-intelligence-is-transforming-the-world/

**Status Checkpoints for All Categories**

|  |  |  |  |
| --- | --- | --- | --- |
| Checkpoint | Software Design and Engineering | Algorithms and Data Structures | Databases |
| Name of Artifact Used | I utilized Software Design and Engineering to develop both the GUI and the functionality of the code. | Algorithms and Data Structures were created to assist in generating data based on user input for interacting with models to predict parameter values. | The database was primarily utilized for storing user information. The user authentication data can be created, read, updated, and deleted. |
| Status of Initial Enhancement | The primary user interface has been created and integrated with the functional code. | The algorithms required for the application have been created and integrated with the GUI to enable user interaction. | The database code management has been created to handle user authentication for accessing the application. |
| Submission Status | I have been focusing on coding the application. I will upload the content after receiving feedback and fixing any errors, particularly related to the GUI navigation. | I have been primarily focused on coding the application. Once I receive feedback, I will upload the content and address any errors, particularly those related to the generated answers. | I have been focusing on developing the code for the application. After receiving feedback and fixing any errors, I will upload the content, paying particular attention to the storage mechanisms and retrieving user information. |
| Status of Final Enhancement | I need to integrate user authentication into the app so that the authentication page appears first when the desktop icon is clicked. | The final improvement aims to check if the created data structure has reliable parameters. | The authentication page is complete and is now waiting for the final app GUI size adjustment to match the window size. |
| Uploaded to ePortfolio | A descriptive image of the UI application has been uploaded to the ePortifolio | No content has been uploaded yet | No content has been uploaded yet |
| Status of Finalized ePortfolio | The ePortfolio has been designed and is ready for content upload. | The ePortfolio has been designed and is ready for content upload. | The ePortfolio has been designed and is ready for content upload. |

Eportfolio has been updated.

https://nathankintusnhu.github.io/ePortfolio/