Mock Interview CIR

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**Questions and Answers:**

ML

1. **Difference between Simple linear reg and multiple linear regression?**

Simple linear regression has only one x and one y variable. Multiple linear regression has one y and two or more x variables. For instance, when we predict rent based on square feet alone that is simple linear regression. When we predict rent based on square feet and age of the building that is an example of multiple linear regression.

1. **What is heatmap and what is it used for?**

Heatmaps are used to show relationships between two variables, one plotted on each axis. By observing how cell colours change across each axis, you can observe if there are any patterns in value for one or both variables.

1. **What is P-P plot?**

A PP Plot is a probability plot for accessing how closely two data sets agree with each other, P-P (probability–probability) plot is a visualization that plots CDFs of the two distributions (empirical and theoretical) against each other.

1. **difference between dimensionality reduction and feature selection**

Feature selection is simply selecting and excluding given features **without changing** them. Dimensionality reduction **transforms** features into a lower dimension.

1. **steps for PCA**

Standardize the range of continuous initial variables

Compute the covariance matrix to identify correlations

Compute the eigenvectors and eigenvalues of the covariance matrix to identify the principal components

Create a feature vector to decide which principal components to keep

Recast the data along the principal components axes

OS

1. **physical address and virtual address difference?**

Physical address refers to the location in a physical memory unit where data is physically stored whereas virtual address is CPU generated which does not physically exist in memory but is a reference to access the physical address.

1. **conversation of virtual address to physical address**

To map virtual memory addresses to physical memory addresses, page tables are used. A page table consists of numerous page table entries (PTE). To make memory translations more efficient, we use page tables to group chunks of memory addresses in one mapping.

1. **printf(\*var) – which address gets printed?**

The Virtual Address of the variable gets printed.

1. **Consider a system with byte-addressable memory, 32-bit logical addresses, 4 kilobyte page size and page table entries of 4 bytes each. The size of the page table in the system in megabytes is?**

No. of entries in page table = 2^32/ 4Kbyte = 2^32/2^12 = 2^20

Size of page table = (No. page table entries) \*(Size of an entry)

= 2^20 \* 4bytes = 2^20\*2^2 = 2^22 = 4Megabytes

**What are the 3 characteristics that you expect from the company?**

* Reputation and Culture
* Work-life Balance
* Career Development