NumPy FA Test Cheat Sheet 1. Array Creation • np.array([...])
• np.arange(start, stop, step)
• np.linspace(a, b, n)
• np.random.randint(low, high, size)
• np.random.rand(m, n)
2. Indexing & Slicing • Row: arr[i]
• Column: arr[:, j]
• Submatrix: arr[a:b, c:d]
• Step slicing: arr[::2]
• Boolean mask: arr[arr > 10]
3. Reshape & Transpose • arr.reshape(m, n)
• arr.T
• arr.flatten()
• arr.swapaxes(a, b)
4. Broadcasting Smaller array auto-expands to match shape
A (3x3) + b (1x3) → b becomes (3x3)
5. Matrix Operations • A @ B (matrix multiply)
• A * B (element-wise)
• np.linalg.det(A)
• np.linalg.eig(A)
6. Statistics • arr.mean(), arr.std()
• np.median(arr)
• arr.max(axis=1)
• Normalization: (arr - arr.min()) / (arr.max() - arr.min())
7. Sorting & Searching • np.sort(arr)
• np.argsort(arr)
• np.where(condition)
• np.argmin(arr)
8. Stacking & Deleting • np.vstack([a, b])
• np.hstack([a, b])
• np.delete(arr, index, axis)
9. Linear Algebra • np.linalg.solve(A, b)
• np.linalg.det(A)
• np.linalg.eig(A)
10. Fourier Transform • np.fft.fft(signal)
• np.fft.fftfreq(n, d)