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THESIS

To obtain the diploma of **Engineer**

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Theme

The Application of Artificial Intelligence in Resume Screening

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In front of the jury composed of:

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Abstract

The hiring process plays a critical role in shaping an organization's long-term strategy for success. Despite this fact, tradition-based methods for finding new talent are frequently slow-moving while others fall victim to various prejudices. In recent years through decades, actually-artificial intelligence AI tools have emerged that allow companies to streamline various aspects of recruitment practices significantly Finally resulting in increased efficiency wider candidate pool diverse talent base as well as minimizing potential biases.

The central objective of this research is centered on investigating how Artificial Intelligence can aid in streamlining recruiting procedures. With a specific focus on designing an automated talent acquisition technique based on Machine Learning & Deep Learning algorithms that scan through applicant resumes/CVs. The software aims at detecting significant talents, credentials as well as career trajectories that qualify candidates while weighing their relevance toward meeting job specifications. Ultimately sorting them out in order from the most suitable fit for the role.

The thesis endeavors to realize its purpose by elucidating on the process to construct an AI-centered recruitment system. This includes a description of methods for collecting data, performing feature engineering techniques, and utilizing machine learning algorithms for analyzing said information.

Finally, this thesis divulges the discoveries made from conducting several tests on an AI-dominated recruitment apparatus. It analyses how well it functions based on its degree of precision, efficiency, and lack of bias while accounting for any existing limitations in its design. Furthermore, recommendations are offered regarding prospects for additional investigation in this field.

The potential of AI to improve recruitment mechanisms in terms of productivity, impartiality, and effectiveness is demonstrated in this thesis.

Keywords : Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, OpenCV, Python, Numpy, Pandas, Distil-Bert, finetuning

List of Acronyms

AI	<i>Artificial Intelligence</i>
ML	<i>Machine Learning</i>
DL	<i>Deep Learning</i>
CNN	<i>Convolutional Neural Network</i>
R-CNN	<i>Region-based Convolutional Neural Network</i>
RNN	<i>Recurrent Neural Network</i>
LSTM	<i>Long Short-Term Memory</i>
Bi-LSTM	<i>Bi-directional Long Short Term Memory</i>
GAN	<i>Generative Adversarial Network</i>
DBN	<i>Deep Belief Network</i>
ATS	<i>Applicant Tracking System</i>
CRM	<i>Candidate Relationship Management</i>
OCR	<i>Optical Character Recognition</i>
HR	<i>Human Resources</i>
CV	<i>Curriculum Vitae</i>
CRF	<i>Conditional Random Field</i>
PDF	<i>Portable Document Format</i>

JPEG	<i>Joint Photographic Experts Group</i>
JS	<i>JavaScript</i>
KT	<i>KerasTuner</i>
TF	<i>TensorFlow</i>
NPM	<i>Node Package Manager</i>
API	<i>Application Programming Interface</i>
HTTP	<i>HyperText Transfer Protocol</i>
HTML	<i>HyperText Markup Language</i>
PPMI	<i>Positive Pointwise Mutual Information</i>