***Learning Face Age Recognition***

*A Project*

*Submitted in partial fulfillment for the*

*Award of the degree of*

**BACHELOR OF TECHNOLOGY**

***IN***

**COMPUTER SCIENCE ENGINEERING**

*Submitted by (Group-7)*

|  |  |
| --- | --- |
| …………………Nikhil Mahajan | (18103070) |
| …………….Jaideep Singh  ……………..Aayush Garg  …………............Gaurang Gupta | (18103071)  (18103078)  (18103084) |

***Under the Guidance of***

***Prof. Sachin Choudhary***

**Punjab Engineering College (Deemed To Be University), Chandigarh 2020-2021**

**TABLE OF CONTENTS**

[**1.Introduction**](#_d3eazy8puprq) **3**

[**2.Motivation**](#_vro45xshtwoh) **4**

[**3. Technologies to be Used:**](#_w5tdayvhll2s) **4**

[**4. Deliverables**](#_ikh39ws1ux3d) **5**

[**5. References**](#_cm7whtbxt6fz) **5**

# 

# 

# 

# 

# 

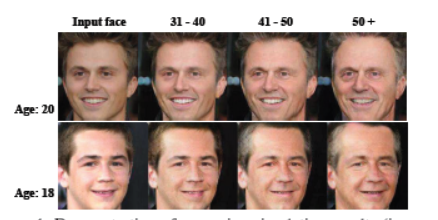
# **1. Introduction**

Age progression is the process of aesthetically rendering a given face image to present the effects of aging. It is often used in the entertainment industry and forensics, e.g., forecasting facial appearances of young children when they grow up or generating contemporary photos for missing individuals. The intrinsic complexity of physical aging, the interferences

caused by other factors (e.g., PIE variations), and shortage of labeled aging data collectively makes face age progression a rather difficult problem. The last few years have witnessed significant efforts tackling this issue, where aging accuracy and identity permanence are commonly

regarded as the two underlying premises of its success .The early attempts were mainly based on the skin’s anatomical structure and they mechanically simulated the profile growth and facial muscle changes w.r.t.

the elapsed time.



# **2.Motivation**

One of the primary motivations behind doing this project was to undertake a challenging project in the vast and immensely popular field of deep learning. The wide and significant applications of this project also encouraged us to take up this project which can be extended among various fields and scenarios.

This project could find many useful applications in the government agency itself. Our government always needs to maintain records of different people for its efficient functioning. The records could be associated with a criminal or could be of a missing child. The images linked with the respective record could be old enough that might render them useless for the purpose of precise recognition. So, one of the most common applications of face age progression is for rendering older versions of missing children or older versions of criminals.

These were the major motivations which provided us the inspiration to work upon this project.

# **3. Technologies to be Used:**

We aim to use and deploy the latest techniques and methodologies in the field of *Data Analysis* and *Computer Vision* using *Deep Learning* and *Machine Learning* models to build our prototype of the research paper. We aim to use python as a base for our Deep Learning Libraries and *Web Technologie*s to implement the necessary frontend required.

# **4. Deliverables**

We aim to implement a new prediction model with sufficient accuracy using a *Web user interface* to access and implement this idea accompanied by

extensive literature survey of existing methods for better understanding and resolution to tackle and resolve the problem of limited face-age database

Our efforts will be concentrated on either improving the complexity or efficiency of the existing models proposed .

# **5. References**

References

[1] AgingBooth. PiVi & Co.

<https://itunes.apple.com/us/app/agingbooth/id357467791?mt=8.>

[2] Face of the future. Computer Science Dept. at

Aberystwyth University.<http://cherry.dcs.aber.>

[ac.uk/Transformer/index.html](http://cherry.dcs.aber.)

[3] Face++ Research Toolkit. Megvii Inc. [http://www.faceplusplus.com](http://www.)

[4] The FG-NET Aging Database. [http://www.fgnet.rsunit.com/](http://www.) and [http://www-prima.inrialpes.fr/FGnet/](http://www-prima.)

[5] M. Arjovsky, S. Chintala, and L. Bottou. Wasserstein GAN.

arXiv preprint arXiv:1701.07875, 2017.

[6] L. Best-Rowden and A. K. Jain. Longitudinal study of automatic

face recognition. **IEEE** PAMI, 40(1):148–162, Jan.

2018.