

9FS! @VFIMSF% +) **% 7NLSJUVVEXI @FXCVS! AJHTLSMNTS! YWNL 3 VAKHNFQ > JYVQ > JX[TWP
4 FHPUVIUFLEXITS! CMNW KNSFQ UVIQJHX! [FW WYUJVNWI! G] 3 YQ! 5 FR F] FSX&B 'BN! = 'BN! FSI 6 ZF
8 FN] FSX&B 'BN! = 'C' = FVMJR FXNH 5 JUFVR JSX&7 FHYQ] !TKIBHNSHW FSI !CJHMSTQTL] %3 NQFSLLF
D SNZJWVX' '

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7NLSJUVVEXIUFXXVS !VHTLSMNTS INW!F! [F] !PST [NBL!WIR JTSJ WNLJSX] !XVYLM!KNSLJUVVEX
TGWVZEXITS!FSI !VWUFWHM! [MNHM!GUNL!YWI !KTVF!QXTKSJJUW&JZNLJSHJ%!NLSXKHFEXITS!TV!FW!F
VUQHJR JSXITKMG&natif. One of fingerprint pattern recognition is artificial neural network. The
R JMTI YWNL Myma's brain principal which consists of neuron as input progrewNTS XT !VVTIYHJ
TYXUYXKVR ! [JNhts exist. The purpose of this final project is applying artificial neural network to
XT!KNSLJUVVEXI pattern recognition and create a program simulating this method. The language used is
4 FWH! /') !WTK] are language with supporting operation system. Artificial neural network is
FHMKHXVJ !WU] is *multilayer neural network* with backpropagation algorithm.

5 FX!YWD are fingerprint images with 120 x 120 pixel size which are processed using image processing
SYR JNH! [NM] image processing. Steps used on image processing such as grayscale conversion, thresholding,
GNSF] IR FLJ] edge segmentation. From image processing, 24 x 24 matrix were generated. In the
XJS! [NM] starization process the matrix changed into 576 x 1 sized vector. The final step is
7VTR !MJ] starization progress would be the fingerprint recognition artificial neural network. In the
NEUYXB KVVST] starization progress, the input will progressed for training and testing.

> JX[TWP training using 90 fingerprints data with 0,9 learning rate and 0,1 momentum. The validation
WITUUJI!FX!+.0^ iteration. Validation result for 30 images, can be recognized with 100% accuracy.
FHHYVH] XT !WTK] fingerprint patterns.

; J] [TWP] fingerprint pattern recognition, artificial neural network, backpropagation algorithm